

HITACHI

SERVICE MANUAL

NTSC

M1LXU Chassis

YK

No.0428FE

27AX2B/C722

R/C:CLU-670GR

ATTENTION: Avant de mettre en service ce châssis, il est important que le technicien de service lise les "Mesures de sécurité" et "Avis concernant la sécurité de l'appareil" dans ce MANUEL DE SERVICE.

CAUTION: Before servicing this chassis, it is important that the service technician read the "Safety Precaution" and "Product Safety Notices" in this Service Manual.

TABLE DES MATIÈRES

INSTRUCTIONS DE SECURITE	2
NOTICE DE SECURITE DE FABRICATION	3
SPECIFICATIONS TECHNIQUES	4
PRECAUTIONS TECHNIQUES	5
FORME D'ONDE DE CHAQUE ÉTAGE	9
DIAGRAMME DE CIRCUIT DE BASE	13
PLAQUETTE DE CABLAGE IMPRIMES	15
DIAGRAMME DE CABLAGE	17
LISTE DES PIÈCES DE RECHANGE	19

CONTENTS

SAFETY PRECAUTIONS	6
PRODUCT SAFETY NOTICE	7
TECHNICAL SPECIFICATIONS	8
TECHNICAL CAUTIONS	8
WAVEFORMS AT EACH SECTION	9
BASIC CIRCUIT DIAGRAM	13
PRINTED WIRING BOARD	15
WIRING DIAGRAM	17
REPLACEMENT PARTS LIST	19

Caractéristiques techniques et composants sont sujets à modification pour amélioration.
SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT.

TELEVISION COULEUR/COLOR TELEVISION

June/Juin 1992 CONSUMER ELECTRONICS DIVISION

INSTRUCTIONS DE SECURITE

AVERTISSEMENT: Etant donné que le châssis de ce récepteur de télévision est connectée au secteur en cours de fonctionnement, aucune réparation ne doit être engagée par quiconque ne connaissant pas les instructions de sécurité indispensables à connaître pour effectuer des travaux sur ce type de matériel.

Les précautions suivantes doivent être observées:

1. Ne pas installer ni déposer ou manipuler le tube-image sans raison sans porter de lunettes de protection contre les éclats. Toute personne non équipée de la sorte doit se tenir éloignée des tubes-image au moment de leur manipulation. Tenir le tube-image loin de soi au moment de sa manipulation.
 2. Quand une réparation doit être faite un transformateur d'isolement doit être placé entre le secteur électrique et le récepteur de télévision, ceci est indispensable avant de procéder à toute réparation sur un châssis en état de marche.
 3. Quand la plaque de montage d'un téléviseur doit être changée, remplacer les dispositifs de protection tels que les dispositifs d'arrêt, les boutons non métalliques, le couvercle du coffret ou les écrans de protection, les condensateurs et résistances d'isolement, etc doivent être remis en place.
 4. Quand une réparation doit être faite, respecter la disposition d'origine des fils. Une attention spéciale est requise en ce qui concerne le passage des fils dans l'étage à haute tension.
 5. Employer toujours les composants de remplacement du fabricant, notamment les composants critiques qui sont ombragés sur le schéma de montage qui ne doivent, en aucun cas être remplacés par ceux d'un autre fabricant. En outre, quand un court-circuit s'est produit, remplacer les composants qui donnent des signes de surchauffe évidente.
 6. Avant de remettre un téléviseur réparé au client, le technicien en charge doit procéder à des essais complets du téléviseur pour être certain que son fonctionnement est tout à fait normal et ne présente aucun risque de danger ou de décharge électrique, il doit également s'assurer que les dispositifs de protection incorporés dans le téléviseur n'ont pas subi de modification ou de détérioration au cours des réparations.
- Par conséquent, les vérifications suivantes doivent être faites pour assurer une protection complète aux clients comme aux réparateurs.

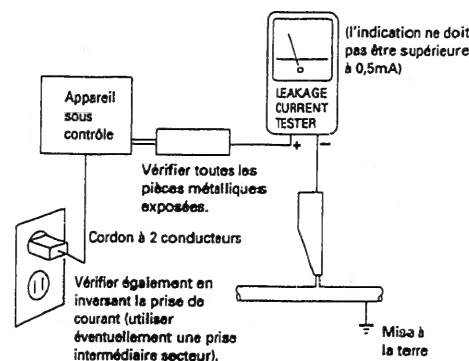
Vérification de fuites de courant au repos

Après avoir débranché la prise du cordon secteur de la prise de sortie secteur de 120V 60Hz, court-circuiter les deux tiges de la prise. Régler l'interrupteur général sur marche. Utiliser un contrôleur d'isolement (500V C.C.) et brancher l'un des fils à la prise couplée et toucher une partie métallique de l'appareil avec l'autre (antennes, têtes de vis, revêtement métallique, axes de commande, etc.) les pièces métalliques

exposées possédant notamment une voie de retour au châssis. Les pièces métalliques exposées possédant une voie de retour au châssis doivent posséder une résistance minimale de 0,24M ohms et une résistance maximale de 5,2M ohms. Toute résistance inférieure à ces données indiquent une anomalie et ceci implique des mesures de correction. Les pièces métalliques exposées ne possédant pas de voie de retour au châssis indiqueront qu'il existe un circuit ouvert.

Vérification de fuites de courant sous tension

Raccorder la prise du cordon secteur dans une prise de sortie secteur de 120V 60Hz (ne pas utiliser de transformateur d'isolement pour effectuer cette vérification). Régler l'interrupteur général sur marche. Utiliser un vérificateur de fuites de courant (Simpson modèle 229 ou l'équivalent) et mesurer le courant qui provient des parties métalliques exposées du coffret de l'appareil (antennes, têtes de vis, revêtement métalliques, axe de commande, etc.) les pièces métalliques exposées possédant notamment une voie de retour au châssis, à toute source de mise à la terre (conduite, tuyau de secteur, etc.). Le courant relevé ne doit pas dépasser 0,5mA.



Vérification de fuites de courant secteur

TOUT RELEVÉ NE CORRESPONDANT PAS AUX TOLERANCES SPECIFIEES PLUS HAUT INDIQUENT UN RISQUE DE CHOC ELECTRIQUE ET LES REPARATIONS NECESSAIRES DOIVENT ETRE FAITES AVANT DE RENDRE LE TELEVISEUR AU CLIENT.

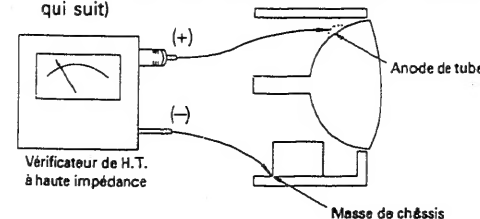
Haute tension

Ce téléviseur est équipé d'un circuit de protection de manière à fournir une indication précise d'une augmentation de tension en comparaison de la valeur prédéterminée. Faire en sorte d'être conformes avec toutes les remarques de ce manuel de réparation concernant le circuit de protection au moment d'effectuer les réparations de telle sorte que ce circuit soit maintenu en parfait état de fonctionnement.

Avertissement au réparateur

Quand le niveau de noir et la image sont minimum, la haute tension de ce téléviseur est inférieure à 34,0kV. Si vous remplacer des composants dans les circuit HOR. et haute tention, s'assurer que la haute tension est de 34,0kV quand le niveau de noir et la image sont à leur minimum.

Le relevé de HT se fait à l'aide d'un vérificateur H.T. à haute impédance. Raccorder la pôle négatif (-) à la masse de châssis et le pôle positif (+) d'anode du tube. (S'en tenir aux branchements spécifiés sur le schéma qui suit)



RADIATION DE RAYONS X

TUBES-IMAGE: La source primaire de radiation des rayons X de ce téléviseur est tout d'abord le tube-image. Le tube-image qui est employé pour le fonctionnement ci-dessus spécifié pour cette plaque de montage est d'une construction spéciale de manière à limiter les radiations de rayons X. Pour assurer une protection continue contre les radiations de rayons X, le tube-image de remplacement doit être identique au modèle d'origine et d'un type approuvé par HITACHI.

Au cours de la recherche de pannes et des essais du téléviseur présentant un problème de haute tension, éviter d'être trop près du tube-image et des composants à haute tension.

Ne pas mettre le châssis sous tension plus que nécessaire pour que la panne et l'excès de tension soit localisée.

NOTICE DE SECURITE DE FABRICATION

De nombreux éléments électriques et mécaniques incorporés dans les téléviseurs HITACHI possèdent des caractéristiques évidentes de sécurité. Ces caractéristiques ne sont pas toujours évidentes par contrôle visuel et la protection assurée par ces éléments n'est pas forcément obtenue en utilisant des éléments de remplacement destinés pour une tension, un wattage supérieur, etc.

Les éléments de remplacement qui possèdent des caractéristiques de sécurité spéciales sont identifiés dans ce manuel de réparation.

Les composants électriques qui possèdent ces caractéristiques sont identifiés par le symbole Δ sur les schémas de montage et dans le catalogue de pièces de rechange de ce manuel de réparation.

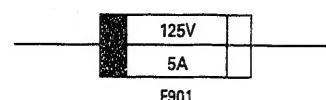
L'emploi de composants de remplacement ne possédant pas les mêmes caractéristiques de sécurité que les composants de remplacement recommandés par HITACHI indiqués dans le catalogue de pièces de rechange de ce manuel de réparation peuvent être à l'origine de décharge électrique, d'incendie, de radiation de rayons X ou présenter d'autres dangers.

Une production de fabrication est continuellement assurée par l'édition d'instructions nouvelles et révisées qui sont fournies de temps en temps. Pour connaître les renseignements les plus récents, consultez toujours le manuel de réparation HITACHI le plus récent. Une demande de manuel de réparation HITACHI ou de suppléments peut être faite auprès de votre HITACHI SALES CORPORATION pour une charge nominale.

ATTENTION

Le symbole suivant placé près du fusible d'alimentation correspond au fusible à fusion rapide qui doit être remplacé. La puissance du fusible est indiquée dans le symbole.

Exemple:



La puissance du fusible F901 est de 5,0A-125V.

Remplacer le fusible avec un fusible de même puissance pour qu'une protection permanent contre l'incendie soit assurée.

SPECIFICATIONS TECHNIQUES

Impédance d'entrée d'antenne : 75 ohms (300 ohms)

Canaux couverts : VHF : 2 à 13
UHF : 14 à 69
CATV MID: A-5 à A-1
A à I

CATV SUPER : J à W
CATV HYPER : W+1 à W+28
CATV ULTRA : W+29 à W+84

Canaux de réception : 181 canaux

Indicateur de canal : Sur l'écran / forme numérique

Fréquences

Intermédiaires : Porteuse de fréquence
intermédiaire image : 45,75MHz
Porteuse de fréquence
intermédiaire son : 41,25MHz
Fréquence intermédiaire
son : 4,50MHz

Entrée alimentation : Secteur altern. 120V, 60Hz

Consommation : 135W

Convergence : Auto-convergent

Focalisation : Electrostatique

Tube cathodique : A68KSA60X

A68AEG20X01

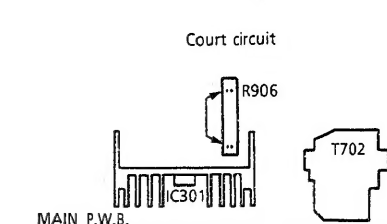
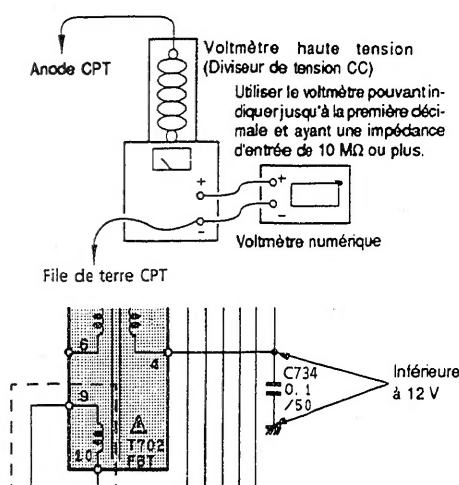
M68JOA98X01

Haut-parleur : 2 haut-parleurs (60 x 120mm)

Sortie son : 3W x 2

PRECAUTIONS TECHNIQUES**Vérification de l'opération du circuit limiteur haute tension**

1. Connecter le voltmètre haute tension entre l'anode CPT (capuchon d'anode) et la terre (TP702) de la manière indiquée dans le diagramme.
2. Régler la tension d'entrée CA à $120 \pm 3V$.
3. Capturer le signal d'émission et régler les niveaux du noir et d'image au maximum. Régler les résistances variables d'écran et de sous-intensité pour que l'intensité du faisceau soit de $1,30 \pm 0,1mA$. (A ce moment, la tension à la borne ABL de FBT -entre les deux extrémités de C734 -doit être de 12V ou moins.)
4. Vérifier qu'à ce moment la haute tension constante est de $27,5 \pm 1,0kV$.
5. Régler la tension d'entrée CA à $100 \pm 5V$, puis court-circuiter les deux extrémités de R906.
6. Laisser les réglages des résistances variables d'écran, de niveau du noir et d'image comme dans l'article (3) et augmenter progressivement la tension d'entrée CA. Vérifier que l'image disparaît lorsque la haute tension est de $31,3kV \pm 1,2kV$.
7. Immédiatement après avoir vérifié que l'image disparaît, mettre l'interrupteur d'alimentation du récepteur sur la position "OFF".



SAFETY PRECAUTIONS

NOTICE: Comply with all cautions and safety related notes located on or inside the cabinet and on the chassis or picture tube.

WARNING: Since the chassis of this receiver is connected to one side of the AC power supply during operation, whenever the receiver is plugged in, service should not be attempted by anyone unfamiliar with the precautions necessary when working on this type of receiver.

The following precautions should be observed:

1. Do not install, remove, or handle the picture tube in any manner unless shatterproof goggles are worn. People not so equipped should be kept away while picture tubes are handled. Keep picture tube away from the body while handling.
2. When service is required, an isolation transformer should be inserted between power line and the receiver before any service is performed on a "HOT" chassis receiver.
3. When replacing a chassis in the receiver, all the protective devices must be put back in place, such as barriers, non-metallic knobs, adjustment and compartment cover-shields, isolation resistors-capacitors, etc.
4. When service is required, observe the original lead dress. Extra care should be taken to assure correct lead dress in the high voltage circuitry area.
5. Always use the manufacturer's replacement components. Especially critical components as indicated on the circuit diagram should not be replaced by other manufacturer's. Furthermore where a short circuit has occurred, replace those components that indicate evidence of overheating.
6. Before returning a serviced receiver to the customer, the service technician must thoroughly test the unit to be certain that it is completely safe to operate without danger of electrical shock, and be sure that no protective device built into the receiver by the manufacturer has become defective, or inadvertently defeated during servicing.

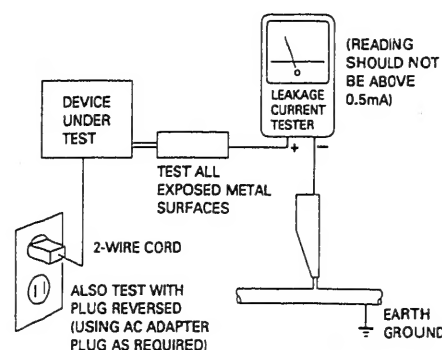
Therefore, the following checks should be performed for the continued protection of the customer and service technician.

Leakage Current Cold Check

With the AC plug removed from the 120V AC 60Hz source, place a jumper across the two plug prongs. Turn the AC power switch on. Using an insulation tester (DC500V), connect one lead to the jumpered AC plug and touch the other lead to each exposed metal part (antennas, screwheads, metal overlays, control shafts, etc.), particularly any exposed metal part having a return path to the chassis. Exposed metal parts having a return path to the chassis should have a minimum resistor reading of 0.24MΩ and a maximum resistor reading of 5.2MΩ. Any resistance value below or above this range indicates an abnormality which requires corrective action. Exposed metal parts not having a return path to the chassis will indicate an open circuit.

Leakage Current Hot Check

Plug the AC line cord directly into a AC 120V 60Hz outlet (do not use an isolation transformer for this check). Turn the AC power switch on. Using a "leakage Current Tester (Simpson Model 229 or equivalent)", measure for current from all exposed metal parts of the cabinet (antennas, screwheads, metal overlays, control shafts, etc.), particularly any exposed metal part having a return path to the chassis, to a known earth ground (water pipe, conduit, etc.). Any current measured must not exceed 0.5mA.



AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE RECEIVER TO THE CUSTOMER.

High Voltage

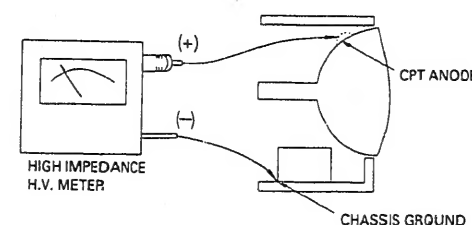
This receiver is provided with a hold down circuit for clearly indicating that voltage has increased in excess of a predetermined value. Comply with all notes described in this Service Manual regarding this hold down circuit when servicing, so that this hold down circuit is operated correctly.

Serviceman warning

With minimum Black Level and Picture, the operating high voltage in this receiver is lower than 34.0kV. In case any component having influence on the high voltage is replaced, confirm that high voltage with minimum Black Level and Picture is lower than 34.0kV.

To measure H.V. use a high impedance H.V. meter. Connect (-) to chassis earth and (+) to the CPT anode button (See the following connection diagram).

NOTE: Turn the power switch off without fail before the connection to the Anode button is made.

**X-radiation**

TUBE: The primary source of X radiation in this receiver is the picture tube. The tube utilized in this chassis is specially constructed to limit X radiation emission.

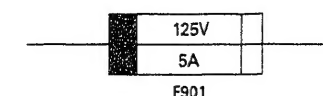
For continued X radiation protection, the replacement tube must be the same type as the original, HITACHI approved type.

When troubleshooting and making test measurements in a receiver with an excessive high voltage problem, avoid coming unnecessarily close to the picture tube and the high voltage component. Do not operate the chassis longer than is necessary to locate the cause of the excessive voltage.

CAUTION

The following symbol near the fuse indicates fast operating fuse to be replaced. Fuse ratings appear within the symbol.

Example:



The rating of fuse F901 is 5.0A-125V.

Replace with the same type fuse for continued protection against fire.

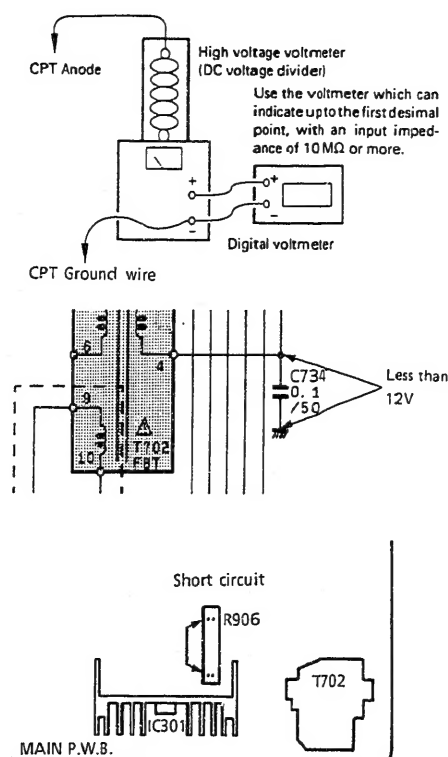
TECHNICAL SPECIFICATIONS

ANTENNA INPUT IMPEDANCE	75Ω (300Ω)	POWER INPUT	AC120V, 60Hz
CHANNEL COVERAGE		POWER RATING	135W
VHF BAND	2~13	CONVERGENCE	Self convergence
UHF BAND	14~69	FOCUS	Electrostatic
CATV MID BAND	A-5~A-1	PICTURE TUBE	A68KSA60X
	A~1		A68AEG20X01
SUPER BAND	J~W		M68JUA98X01
HYPER BAND	W+1~W+28	SPEAKER	2 Speakers (60 x 120mm)
ULTRA BAND	W+29~W+84	SOUND OUTPUT	3W x 2
RECEIVING CHANNEL	181ch		
CHANNEL INDICATOR	DIGITAL/ON SCREEN		
INTERMEDIATE FREQUENCY			
Picture 1-F Carrier	45.75MHz		
Sound 1-F Carrier	41.25MHz		
Sound 1-F	4.50MHz		

TECHNICAL CAUTIONS

High voltage limiter circuit operation check

1. Connect the high voltage voltmeter between the CPT anode terminal (anode cap) and ground (TP702) as shown in the diagram.
2. Set the AC input voltage to $120 \pm 3V$.
3. Receive the broadcast signal and set the picture level and the black level to maximum. Adjust the screen VR and sub brightness VR so that beam current is $1.30 \pm 0.1mA$. (The voltage at ABL terminal of FBT — between both ends of C734 — should 12V or less at this time.)
4. Check that the constant high voltage is $27.5 \pm 1.0kV$ at this time.
5. Set the AC input voltage to $100 \pm 5V$ and then shortcircuit both ends of R906.
6. Leave the setting of the picture, black level and screen VRs as in item (3) and gradually increase the AC input voltage. Check that the picture disappears when the high voltage is $31.3kV \pm 1.2kV$.
7. Turn the switch of the set off immediately after checking that the picture disappears.



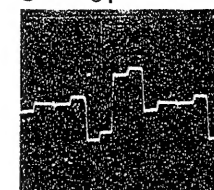
FORME D'ONDE DE CHAQUE ÉTAGE / WAVEFORMS AT EACH SECTION

Les nombres qui sont indiqués entre parenthèses correspondent aux emplacements qui sont représentés sur schéma de câblage.

Numbers inside () correspond to locations shown in the circuit diagram.

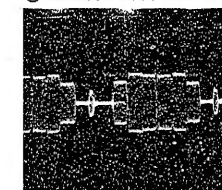
MAIN P.W.B.

① IC201 ⑩ pin



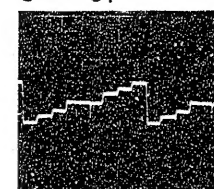
1V/div
10μsec./div

⑥ Between C503 and C518



0.1V/div
10μsec./div

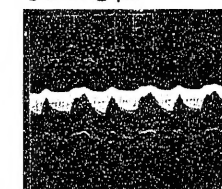
② IC201 ⑩ pin



0.5V/div
10μsec./div

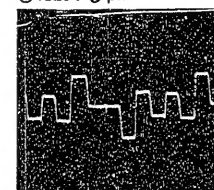
POWER P.W.B.

⑦ IC651 ⑥ pin



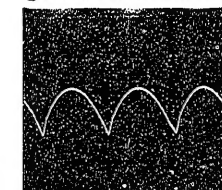
0.5V/div
5msec./div

③ IC201 ⑩ pin



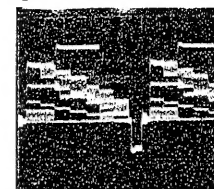
0.5V/div
10μsec./div

⑧ Between R669 and R651



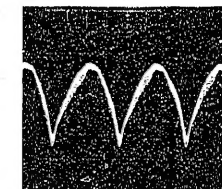
2V/div
5msec./div

④ Q201 emitter



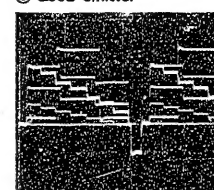
0.2V/div
10μsec./div

⑨ Q651 emitter



1V/div
5msec./div

⑤ Q303 emitter



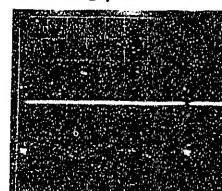
0.2V/div
10μsec./div

⑩ Between R627 and R650

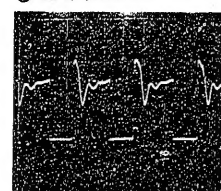


0.5V/div
2msec./div

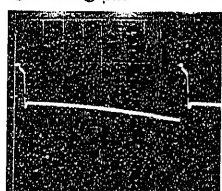
⑪ IC625 ② pin

2V/div
2msec./div

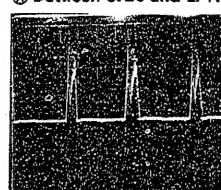
⑫ Q710 corrector

10V/div
20μsec./div

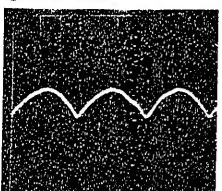
⑬ IC625 ⑩ pin

20V/div
2msec./div

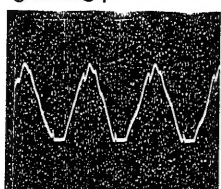
⑭ Between C726 and L711

50V/div
20μsec./div

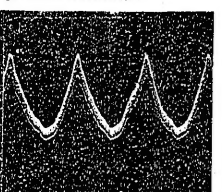
⑮ Q750 base

0.5V/div
5msec./div

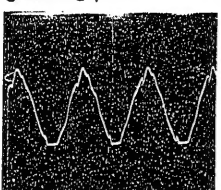
⑯ IC902 ② pin

50V/div
5msec./div

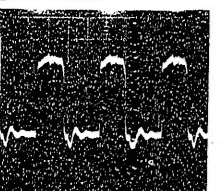
⑰ Q752 corrector

5V/div
5msec./div

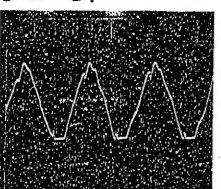
⑱ IC902 ⑤ pin

50V/div
5msec./div

⑲ Q710 base

0.2V/div
20μsec./div

⑳ IC903 ④ pin

50V/div
5msec./div

Circuit No.	Pin No.	Voltage (V)
MAIN	1/2 P.W.B.	
1	4.7	
2	4.7	
3	0	
4	3.8	
5	4.8	
6	1.7	
7	1.1	
8	5.6	
9	0.1	
10	1.7	
11	1.6	
12	1.0	
13	0	
14	0	
15	4.8	
16	0	
17	0	
18	0	
19	4.7	
20	4.7	
21	4.7	
22	4.7	
23	0	
24	0	
25	0.1	
26	2.1	
27	0	
28	4.8	
29	4.8	
30	2.1	
31	2.1	
32	0	
33	0	
34	0	
35	0	
36	0	
37	4.8	
38	4.8	
39	4.8	
40	4.8	
41	4.8	
42	4.8	
43	0	
44	4.6	
45	0.2	
46	0.1	
47	4.7	
48	0	
49	4.5	
50	4.5	
51	4.5	
52	4.3	
53	4.4	
54	0.5	
55	3.6	
56	4.8	
57	0	
58	0	
59	0	
60	0	
61	0	
62	4.4	
63	4.0	
64	4.8	
1	5.1	
2	1.7	
3	0.4	
4	0.1	
5	0	
6	0	
7	2.7	
8	0	
9	3.9	
10	3.9	

Circuit No.	Pin No.	Voltage (V)
MAIN	1/2 P.W.B.	
11	4.0	
12	0	
13	2.5	
14	3.9	
15	5.5	
16	9.0	
1	4.7	
2	4.8	
3	0	
4	4.8	
5	4.8	
6	4.8	
7	4.8	
8	4.8	
1	5.7	
2	6.8	
3	5.6	
4	5.6	
5	4.3	
6	4.0	
7	0	
8	4.5	
9	4.5	
10	5.0	
11	8.7	
12	5.6	
13	5.2	
14	8.7	
15	12.0	
16	11.9	
17	12.6	
18	4.9	
19	5.0	
20	5.0	
21	3.6	
22	-5.5	
23	0.6	
24	0	
25	5.1	
26	5.7	
27	7.4	
28	4.4	
29	7.1	
30	7.6	
31	4.1	
32	2.6	
33	5.3	
34	4.2	
35	4.0	
36	4.6	
37	0	
38	3.4	
39	5.1	
40	4.7	
41	3.8	
42	4.7	
43	0	
44	3.3	
45	3.0	
46	3.0	
47	8.3	
48	0	
49	2.1	
50	7.7	
51	7.4	
52	4.7	
1	4.5	
2	0	
3	4.5	
4	0	
5	4.6	
6	4.7	
7	2.9	
8	2.3	
9	4.5	

Circuit No.	Pin No.	Voltage (V)
MAIN	1/2 P.W.B.	
10	0	
11	2.6	
12	2.5	
13	4.5	
14	4.5	
15	2.7	
16	0.1	
17	4.7	
18	4.6	
19	1.6	
20	4.5	
21	9.0	
22	4.5	
1	1.2	
2	1.3	
3	4.7	
4	4.7	
5	4.6	
6	0	
7	4.7	
8	6.2	
9	0	
10	4.5	
11	4.7	
12	4.7	
13	1.2	
14	4.8	
15	0.3	
16	4.7	
17	0.3	
18	7.7	
19	4.8	
20	7.6	
21	4.9	
22	5.1	
23	7.0	
24	0	
25	0	
26	7.9	
27	4.7	
28	4.9	
29	3.0	
30	2.9	
31	0.1	
32	9.0	
33	5.4	
34	1.7	
35	4.5	
36	0.6	
37	3.8	
38	4.0	
39	4.7	
40	4.0	
41	3.8	
42	4.7	
B	0.7	
C	0	
E	0	
B	0	
C	4.7	
E	0	
B	0.7	
C	0	
E	0	
B	-0.1	
C	4.3	
E	0	
B	0	
C	4.5	
E	0	
B	4.1	
C	4.7	
E	4.7	
B	0	
C	4.7	
E	0	

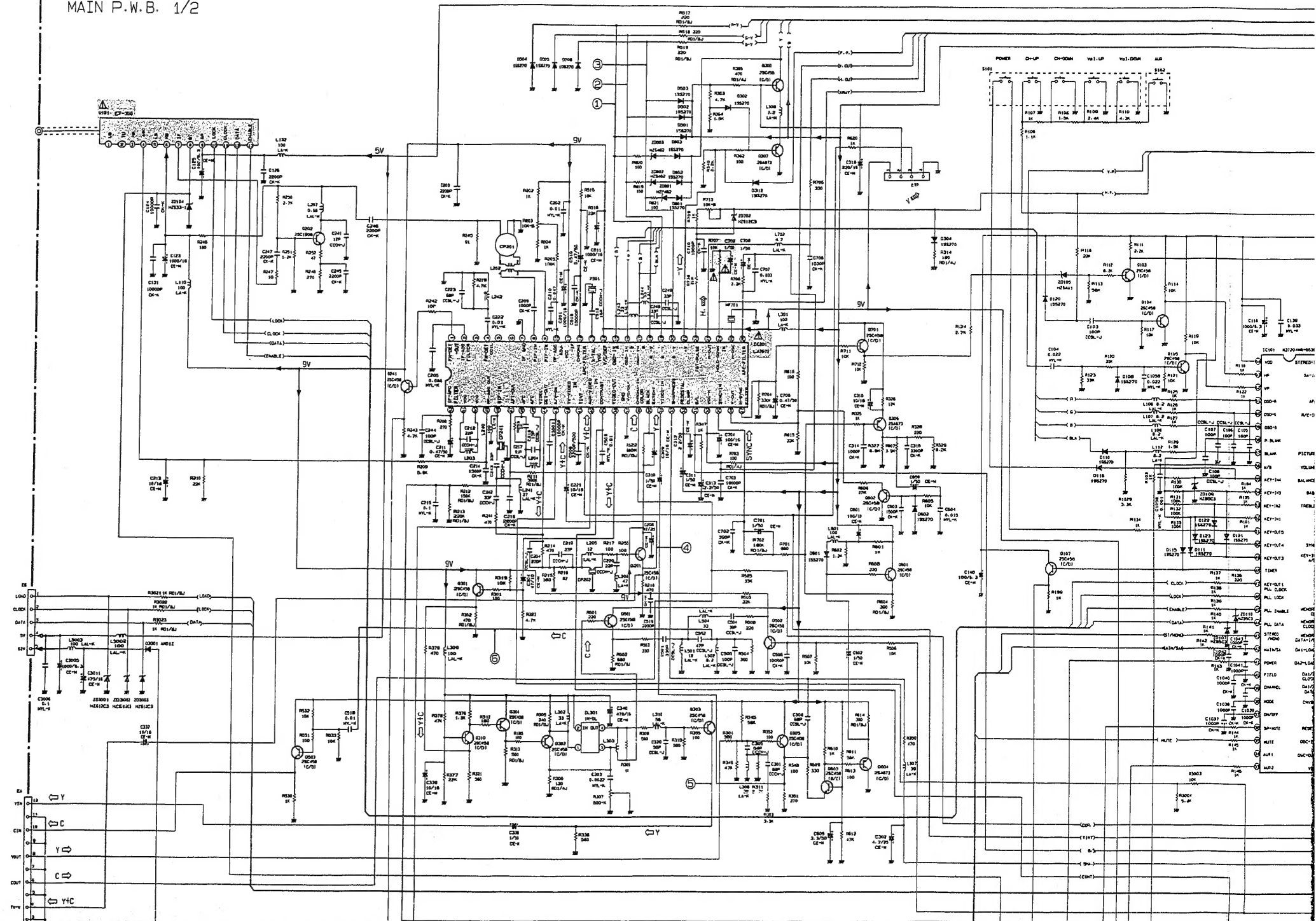
Circuit No.	Pin No.	Voltage (V)
MAIN	1/2 P.W.B.	
B	1.8	
C	8.7	
E	1.1	
B	2.3	
C	7.4	
E	1.6	
B	5.9	
C	8.7	
E	5.2	
B	2.7	
C	8.7	
E	2.0	
B	4.1	
C	8.4	
E	3.4	
B	1.7	
C	9.0	
E	1.0	
B	4.8	
C	8.5	
E	4.1	
B	3.9	
C	9.0	
E	2.7	
B	4.8	
C	1.0	
E	4.6	
B	3.8	
C	0	
E	3.6	
B	4.4	
C	3.1	
E	3.6	
B	8.2	
C	9.0	
E	7.6	
B	2.6	
C	4.8	
E	1.9	
B	0	
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E	0	
B	4.3	
C	9.0	
E	3.6	
B	4.3	
C	9.0	
E	3.7	
B	0	
C	1.0	
E	0	
B	-0.3	
C	0	
E	-0.3	
B	0	
C	0	
E	0	
B	2.2	
C	5.1	
E	1.5	
B	2.2	
C	5.6	
E	1.6	
B	8.8	
C	9.0	
E	8.1	
B	8.8	
C	9.0	
E	8.1	
B	2.8	
C	8.8	
E	2.4	
B	2.8	
C	8.8	
E	2.4	

Circuit No.	Pin No.	Voltage (V)
MAIN	1/2 P.W.B.	
B	1.1	
C	2.4	
E	1.6	
B	0.7	
C	1.6	
E	0	
B	3.4	
C	9.0	
E	2.7	
B	0	
C	9.0	
E	0	
B	4.4	
C	9.0	
E	3.7	
B	5.5	
C	9.0	
E	4.8	
B	0	
C	4.3	
E	0	
B	3.9	
C	7.4	
E	3.3	
B	7.4	
C	0	
E	8.0	
B	7.3	
C	9.01	
E	6.7	

Circuit No.	Pin No.	Voltage (V)	Circuit No.	Pin No.	Voltage (V)	Circuit No.	Pin No.	Voltage (V)	
MAIN 2/2 P.W.B.			MAIN 2/2 P.W.B.			CPT P.W.B.			
IC450	1	1.2	Q851	B	6.0	Q851	B	4.9	
	2	0		C	9.7		C	8.1	
	3	15.7		E	5.3		E	4.3	
	4	0	Q710	B	0.3	Q852	B	5.0	
	5	0		C	15.7		C	8.0	
	6	1.2		E	0		E	4.3	
	7	7.9	Q711	B		Q853	B	5.1	
	8	14.8		C			C	8.1	
	9	0		E	0		E	4.5	
	IC625	10	15.8	Q712	B	0	Q854	B	9.0
		11	14.8		C	15.7		C	152.0
		12	7.9		E	0		E	8.4
1		7.9	Q750	B	1.2	Q855	B	9.0	
2		4.3		C	12.6		C	148.0	
3		3.9		E	0.7		E	8.4	
4		3.9	Q751	B	22.5	Q856	B	9.0	
5		0		C	0.6		C	152.0	
6		3.8		E	22.9		E	8.5	
7		3.7	Q752	B	0.6	Q863	B	0.7	
8		25.8		C	17.1		C	4.3	
9		2.4		E	0		E	3.6	
IC651	10	1.3	Q753	B		Q864	B	3.0	
	11	0		C	0		C	3.7	
	12	14.2		E	121.8		E	3.7	
	13	26.4	Q901	B	67.2				
	1	5.2		C	72.0				
	2	5.2		E	68.1				
	3	5.2	Q902	B	5.7				
	4	0		C	24.0				
	5	5.7		E	5.1				
	6	5.7	Q903	G	0				
	7	6.0		A	26.8				
	8	10.9		L	0				
IC701	1	10.9	Q904	B	13.3				
	2	9.7		C	15.8				
	3	0		E	12.8				
	4	3.9	Q905	B	17.9				
	5	32.8		C	18.4				
	6	4.0		E	18.8				
IC702	1	0	Q906	B	15.9				
	2	0		C	0				
	3	0		E	16.1				
	4	15.8	Q907	B	10.1				
1	0	C		15.8					
2	131.2	E		9.5					
IC901	3	150.1	Q908	B	0.7				
	4	130.5		C	0.1				
	1	—		E	0				
	IC902	2	75.4	Q909	B	28.5			
3		—	C		0				
4		79.0	E		28.8				
5		73.0							
1		25.0							
2		24.0							
IC903	3	0							
	4	68.2							
	5	71.7							
	6	—							
	1	11.5							
	2	0.8							
IC904	3	5.5							
	B	0							
	C	15.7							
Q450	E	0							
	B	0.7							
	C	0							
Q581	E	0							
	B	6.8							
	C	25.7							
Q825	E	7.4							
	B	6.8							
	C	0							
Q826	E	7.4							

DIAGRAMME DE CIRCUIT DE BASE / BASIC CIRCUIT DIAGRAM

MAIN P.W.B. 1/2

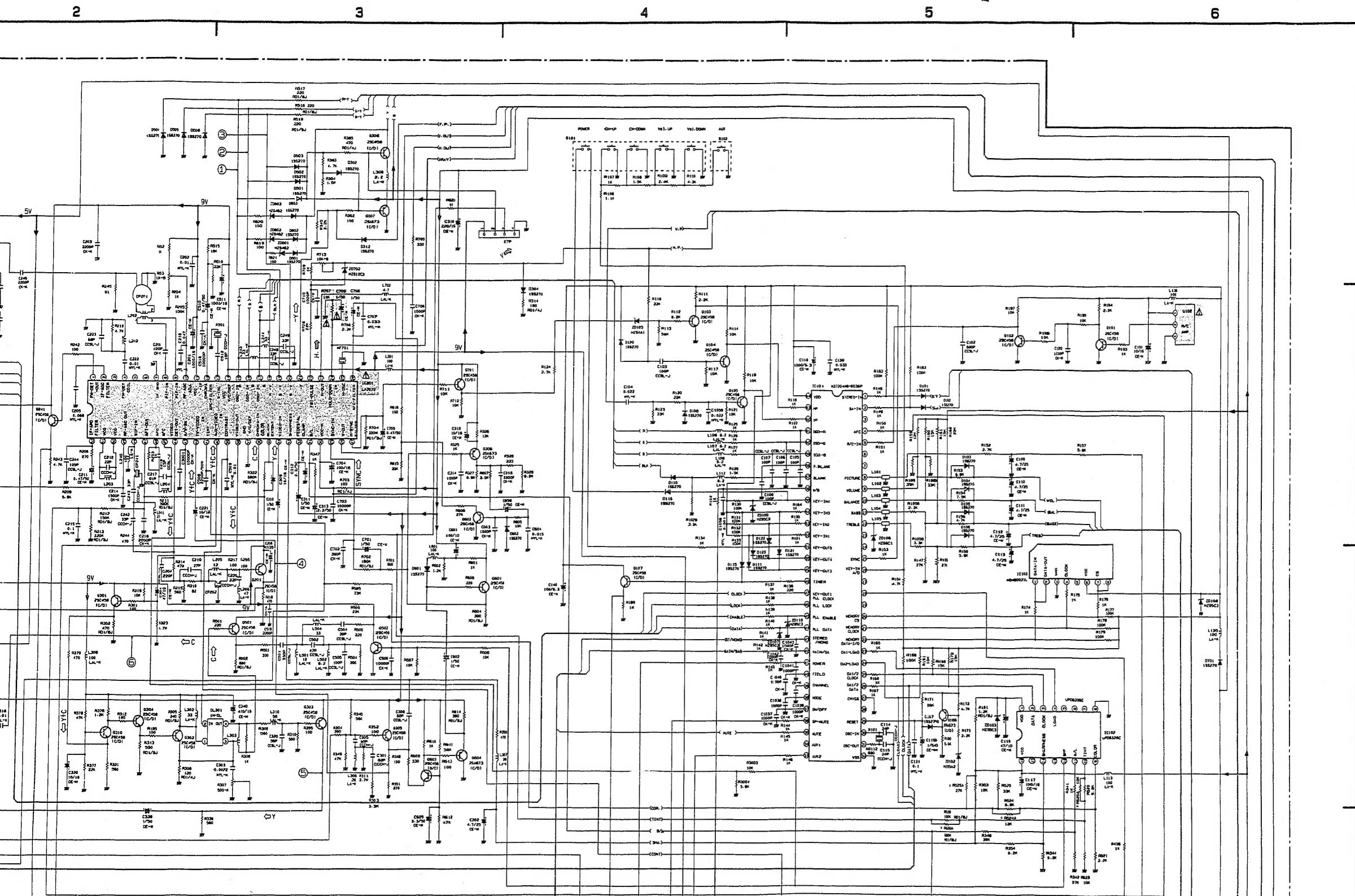


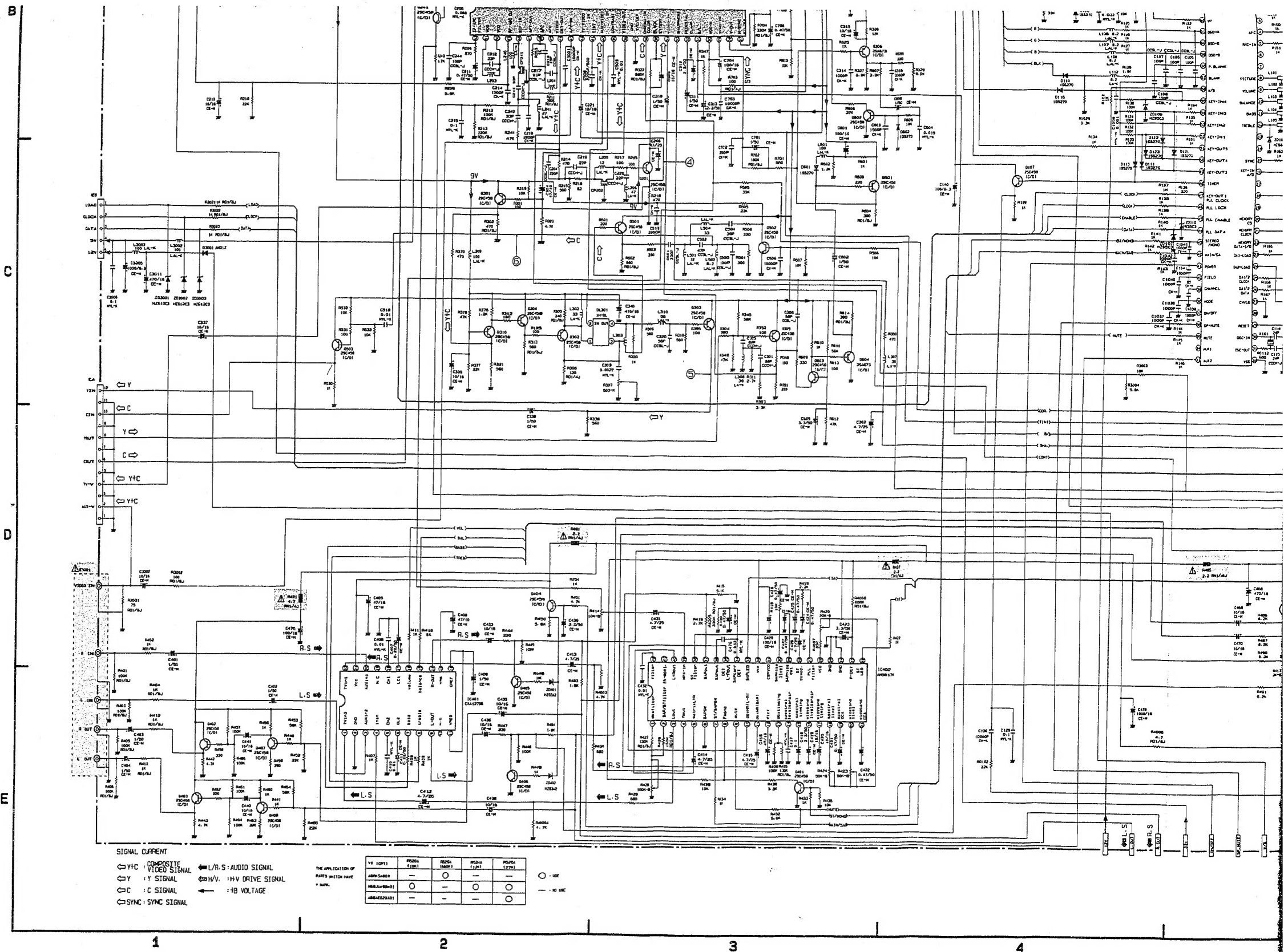
symbole Δ et indiqués par une zone de
procéder au remplacement de l'un de ces
manuel de réparation. Ne pas altérer le

DIAGRAMME DE CIRCUIT DE BASE / BASIC CIRCUIT DIAGRAM

PRODUCT SAFETY NOTE: Components marked with a Δ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver though improper servicing.

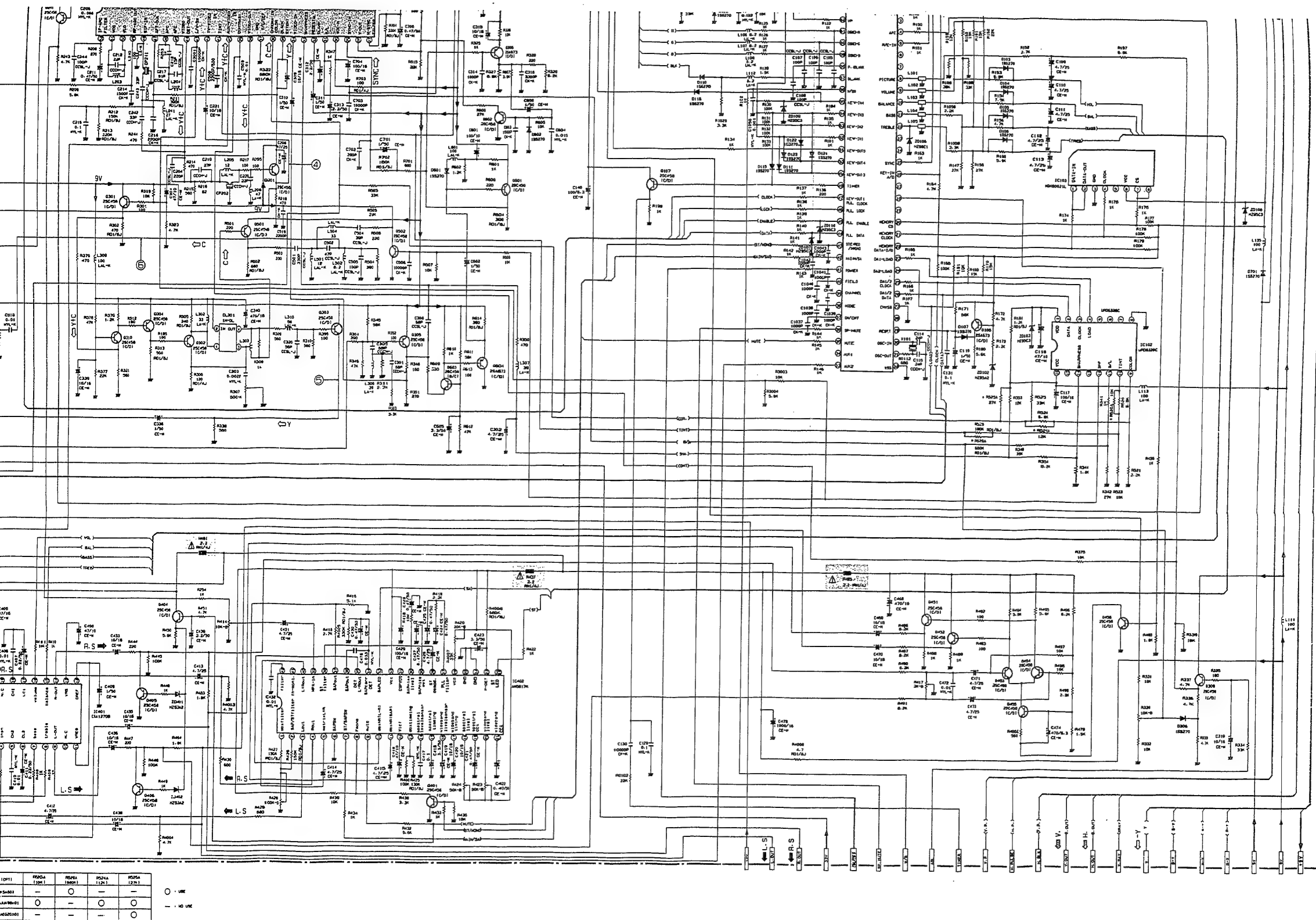
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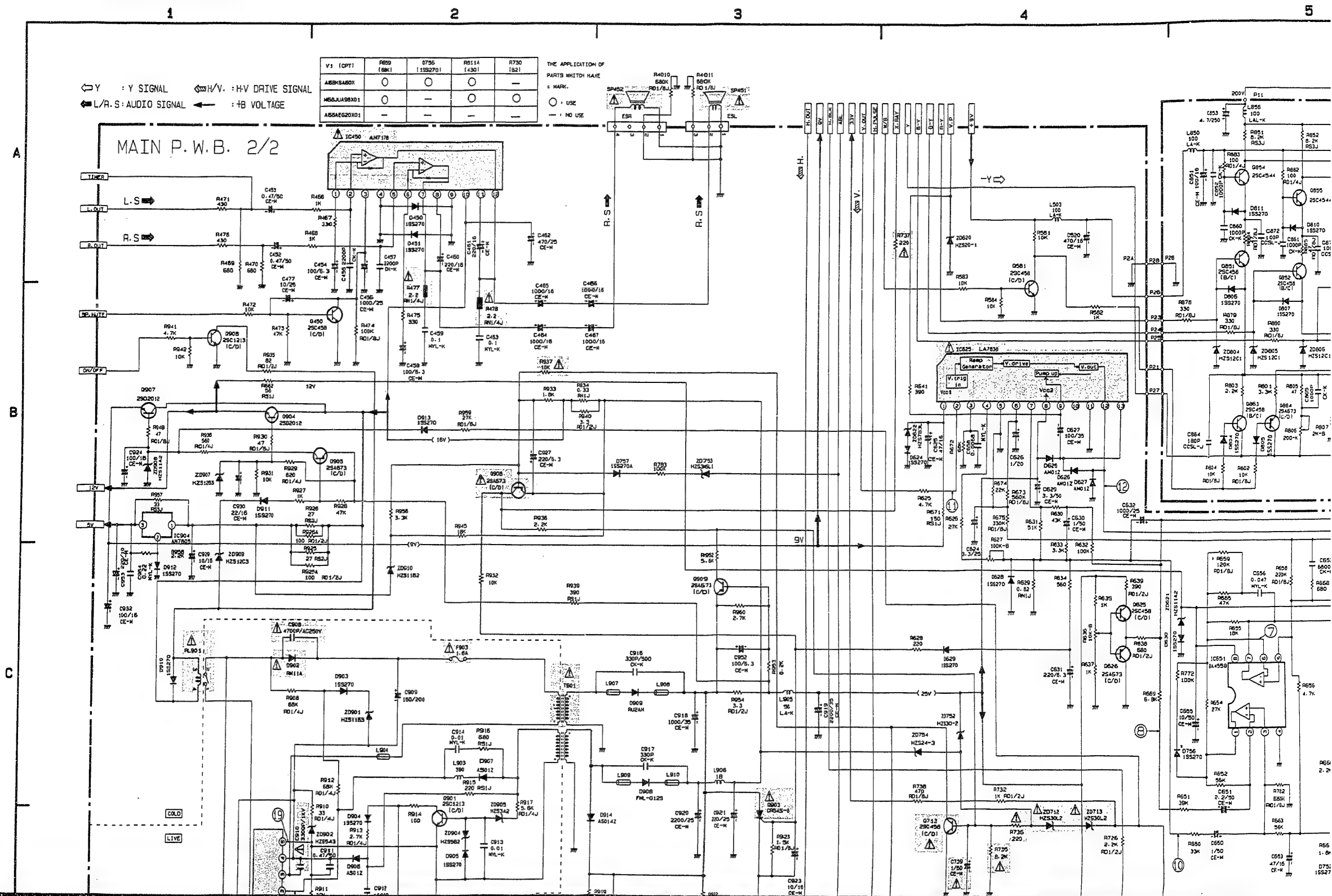


• Etant donné que ceci représente un diagramme schématique de base, la valeur des éléments est sujette à modification pour des raisons d'amélioration.

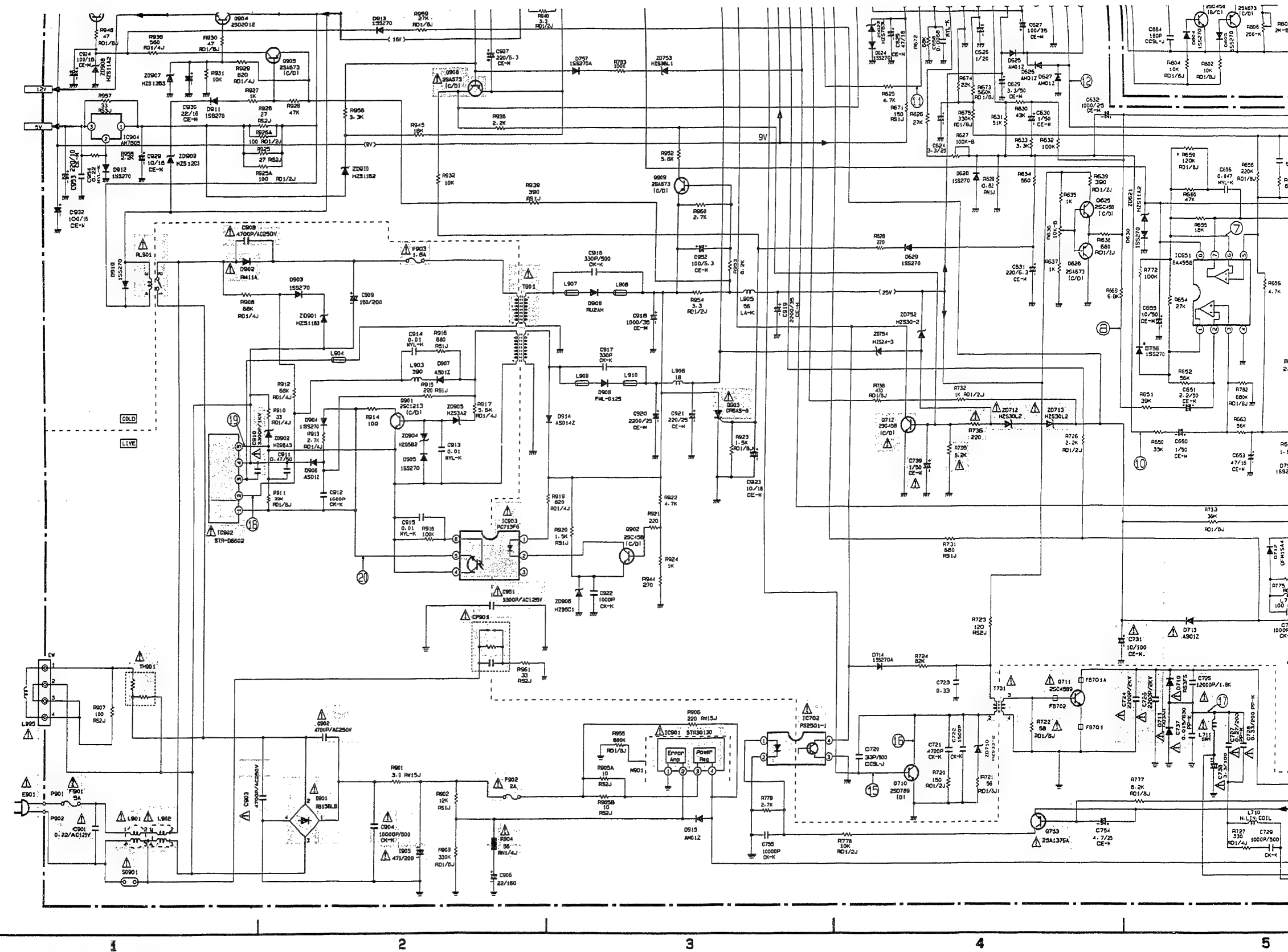
• Since this is a basic circuit diagram, the value of components is subject to modification for reasons of improvement.



NOTICE DE SÉCURITÉ DE FABRICATION: Les composants qui sont accompagnés du symbole  et indiqués par une zone de couleur, possèdent des caractéristiques spéciales qui ont trait à la sécurité. Avant de procéder au remplacement de l'un de ces composants, lire attentivement la notice de sécurité de fabrication contenue dans ce manuel de réparation. Ne pas altérer le niveau de sécurité de l'appareil en procédant à des réparations erronées.

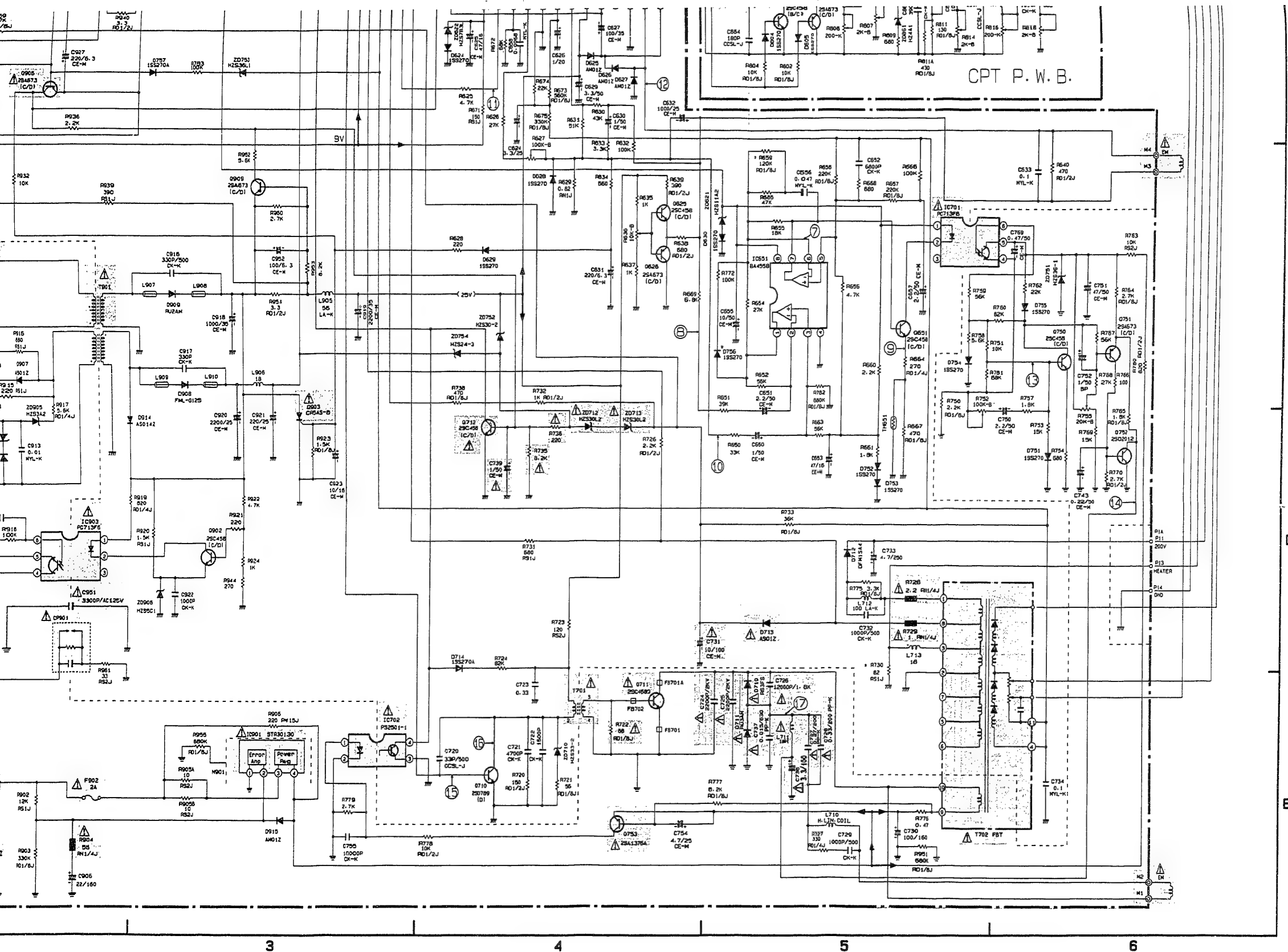


B
C
D
E



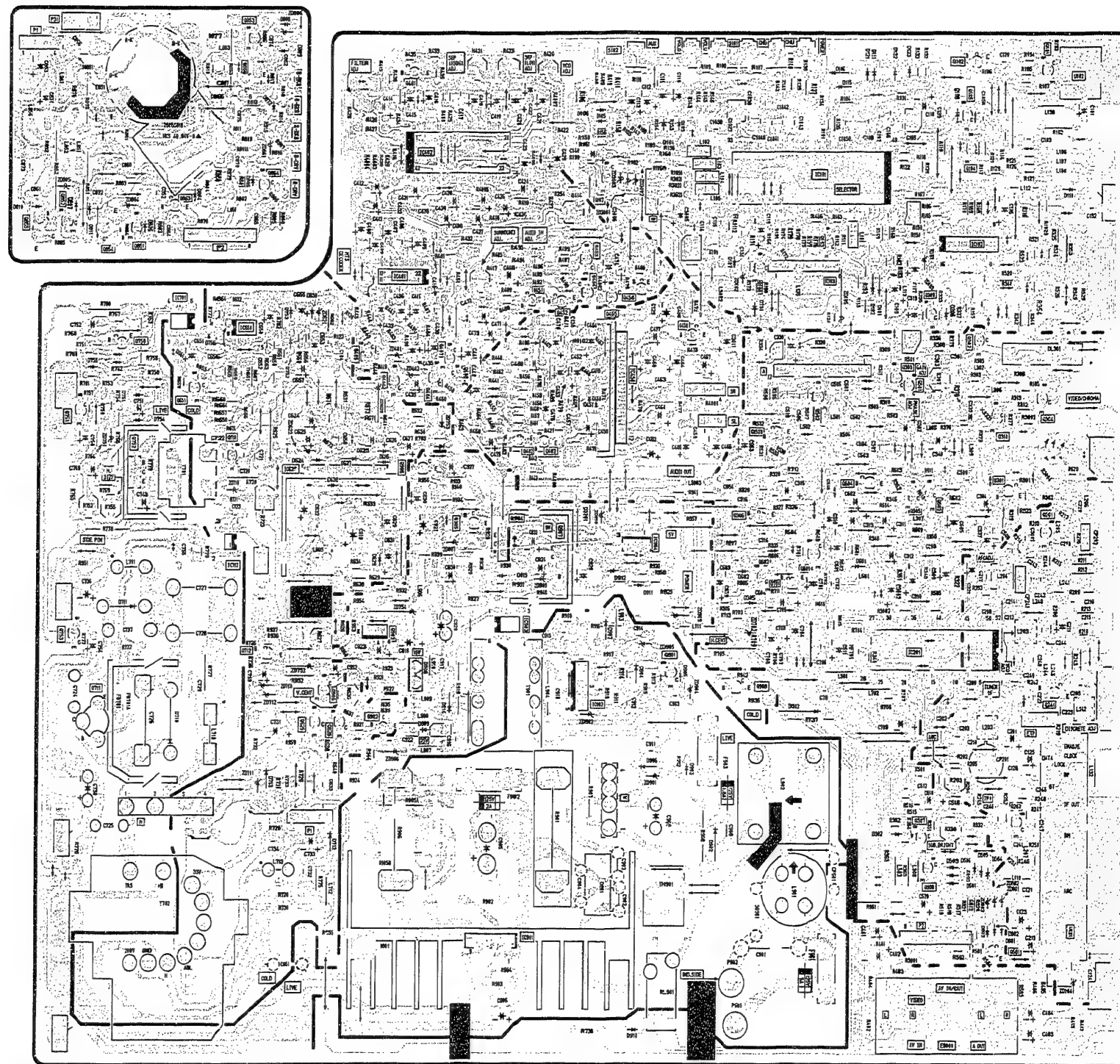
• Etant donné que ceci représente un diagramme schématisé de base, la valeur des éléments est sujette à modification pour des raisons d'amélioration.

• Since this is a basic circuit diagram, the value of components is subject to change for reasons of improvement.
• All DC voltage to be measured with a tester (



• Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.
 • All DC voltage to be measured with a tester (100kΩ/V). Voltage taken on a complex color bar signal including a standard color bar signal.

MAIN P.W.B.



LISTE DES PIÈCES DE RECHANGE / REPLACEMENT PARTS LIST

PRODUCT SAFETY NOTE: Components marked with a Δ have special characteristics important to safety. Before replacing any of these components, read carefully, the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

ABBREVIATIONS	capacitors	CD: Ceramic disk, PF: Polyester film, EL: Electrolytic, PP: Polypropylene, PR: Paper, TA: Tantalum, TM: Trimmer.
	Resistors	CF: Carbon film, CC: Carbon composition, MF: Metal oxide film, VR: Variable resistor, WW: Wire wound, FR: Fuse resistor, MG: Metal glazed
	Semiconductor	TR: Transistor, DI: Diode, ZD: Zener diode, VA: Varistor, TH: Thermistor, IC: IC.

SYMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION
CAPACITORS					
C101	0800015	CAPACITOR, ELECTROLYTIC 10MF 16V	C203	0244105	CD 2200PF +-10% 50V
C102	0890085	CD 680PF +-10% 50V	C205	0880055	PF 0.068MF +-10% 50V
C103	0890074	CD 100PF +-5% 50V	C209	0890087	CD 1000PF +-10% 50V
C1037	0890087	CD 1000PF +-10% 50V	C210	0880053	PF 0.047MF +-10% 50V
C1038	0890087	CD 1000PF +-10% 50V	C211	0800001	CAPACITOR, ELECTROLYTIC 0.47MF 50V
C1039	0890087	CD 1000PF +-10% 50V	C212	0890118	CD 22PF +-5% 50V
C104	0880048	PF 0.022MF +-10% 50V	C213	0800015	CAPACITOR, ELECTROLYTIC 10MF 16V
C1040	0890087	CD 1000PF +-10% 50V	C214	0890089	CD 1500PF +-10% 50V
C1041	0890087	CD 1000PF +-10% 50V	C215	0880057	PF 0.1MF +-10% 50V
C1042	0890087	CD 1000PF +-10% 50V	C216	0244105	CD 2200PF +-10% 50V
C1043	0890087	CD 1000PF +-10% 50V	C217	0246463	CD 91PF +-5% 50V
C105	0890074	CD 100PF +-5% 50V	C218	0890116	CD 15PF +-5% 50V
C1056	0890087	CD 1000PF +-10% 50V	C219	0890119	CD 27PF +-5% 50V
C1058	0880048	PF 0.022MF +-10% 50V	C220	0890118	CD 22PF +-5% 50V
C106	0890074	CD 100PF +-5% 50V	C221	0800015	CAPACITOR, ELECTROLYTIC 10MF 16V
C107	0890074	CD 100PF +-5% 50V	C222	0880044	PF 0.01MF +-10% 50V
C108	0890074	CD 100PF +-5% 50V	C223	0246460	CD 68PF +-5% 50V
C109	0800015	CAPACITOR, ELECTROLYTIC 10MF 16V	C241	0890115	CD 12PF +-5% 50V
C110	0800009	CAPACITOR, ELECTROLYTIC 4.7MF 25V	C242	0890121	CD 33PF +-5% 50V
C111	0800009	CAPACITOR, ELECTROLYTIC 4.7MF 25V	C243	0890121	CD 33PF +-5% 50V
C112	0800009	CAPACITOR, ELECTROLYTIC 4.7MF 25V	C244	0246464	CD 100PF +-5% 50V
C113	0800009	CAPACITOR, ELECTROLYTIC 4.7MF 25V	C245	0244105	CD 2200PF +-10% 50V
C114	0236359	CD 24PF +-2% 50V	C246	0244105	CD 2200PF +-10% 50V
C115	0236359	CD 24PF +-2% 50V	C247	0244105	CD 2200PF +-10% 50V
C116	0800039	CAPACITOR, ELECTROLYTIC 47MF 10V	C248	0890121	CD 33PF +-5% 50V
C117	0800049	CAPACITOR, ELECTROLYTIC 100MF 16V	C249	0890121	CD 33PF +-5% 50V
C118	0800079	CAPACITOR, ELECTROLYTIC 1000MF 6.3V	C3001	0244171	CD 0.01MF +-80-20% 50V
C119	0800003	CAPACITOR, ELECTROLYTIC 1MF 50V	C3002	0800015	CAPACITOR, ELECTROLYTIC 10MF 16V
C120	0890087	CD 1000PF +-10% 50V	C3005	0800079	CAPACITOR, ELECTROLYTIC 1000MF 6.3V
C121	0244171	CD 0.01MF +-80-20% 50V	C3006	0880057	PF 0.1MF +-10% 50V
C123	0800082	CAPACITOR, ELECTROLYTIC 1000MF 16V	C301	0890073	CD 82PF +-5% 50V
C124	0244171	CD 0.01MF +-80-20% 50V	C3011	0800074	CAPACITOR, ELECTROLYTIC 470MF 16V
C125	0800047	CAPACITOR, ELECTROLYTIC 100MF 6.3V	C302	0800009	CAPACITOR, ELECTROLYTIC 4.7MF 25V
C126	0244105	CD 2200PF +-10% 50V	C303	0880035	PF 2200PF +-10% 50V
C129	0880057	PF 0.1MF +-10% 50V	C304	0800039	CAPACITOR, ELECTROLYTIC 47MF 10V
C130	0244171	CD 0.01MF +-80-20% 50V	C308	0890068	CD 39PF +-5% 50V
C131	0880057	PF 0.1MF +-10% 50V	C309	0800015	CAPACITOR, ELECTROLYTIC 10MF 16V
C139	0880051	PF 0.033MF +-10% 50V	C310	0800003	CAPACITOR, ELECTROLYTIC 1MF 50V
C140	0800047	CAPACITOR, ELECTROLYTIC 100MF 6.3V	C311	0800003	CAPACITOR, ELECTROLYTIC 1MF 50V
C201	0800082	CAPACITOR, ELECTROLYTIC 1000MF 16V	C312	0800005	CAPACITOR, ELECTROLYTIC 2.2MF 50V
C202	0880044	PF 0.01MF +-10% 50V	C313	0800005	CAPACITOR, ELECTROLYTIC 2.2MF 50V
			C314	0890087	CD 1000PF +-10% 50V
			C315	0800015	CAPACITOR, ELECTROLYTIC 10MF 16V
			C316	0244107	CD 3300PF +-10% 50V

PRODUCT SAFETY NOTE: Components marked with a Δ have special characteristics important to safety. Before replacing any of these components, read carefully, the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

SYMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION
C318	0800058	CAPACITOR, ELECTROLYTIC 220MF 16V	C462	0800075	CAPACITOR, ELECTROLYTIC 470MF 25V
C319	0800015	CAPACITOR, ELECTROLYTIC 10MF 16V	C463	0880057	PF 0.1MF +-10% 50V
C337	0800015	CAPACITOR, ELECTROLYTIC 10MF 16V	C464	0800082	CAPACITOR, ELECTROLYTIC 1000MF 16V
C338	0800003	CAPACITOR, ELECTROLYTIC 1MF 50V	C465	0800082	CAPACITOR, ELECTROLYTIC 1000MF 16V
C339	0800015	CAPACITOR, ELECTROLYTIC 10MF 16V	C466	0800082	CAPACITOR, ELECTROLYTIC 1000MF 16V
C340	0800074	CAPACITOR, ELECTROLYTIC 470MF 16V	C467	0800082	CAPACITOR, ELECTROLYTIC 1000MF 16V
C401	0800003	CAPACITOR, ELECTROLYTIC 1MF 50V	C468	0800074	CAPACITOR, ELECTROLYTIC 470MF 16V
C402	0800003	CAPACITOR, ELECTROLYTIC 1MF 50V	C469	0800015	CAPACITOR, ELECTROLYTIC 10MF 16V
C403	0800003	CAPACITOR, ELECTROLYTIC 1MF 50V	C470	0800015	CAPACITOR, ELECTROLYTIC 10MF 16V
C404	0800003	CAPACITOR, ELECTROLYTIC 1MF 50V	C471	0800009	CAPACITOR, ELECTROLYTIC 4.7MF 25V
C405	0800041	CAPACITOR, ELECTROLYTIC 47MF 16V	C472	0880044	PF 0.01MF +-10% 50V
C406	0880044	PF 0.01MF +-10% 50V	C473	0800009	CAPACITOR, ELECTROLYTIC 4.7MF 25V
C407	0253079	EL 0.22MF 50V	C474	0800072	CAPACITOR, ELECTROLYTIC 470MF 6.3V
C408	0800039	CAPACITOR, ELECTROLYTIC 47MF 10V	C475	0800049	CAPACITOR, ELECTROLYTIC 100MF 16V
C409	0800003	CAPACITOR, ELECTROLYTIC 1MF 50V	C476	0244171	CD 0.01MF +-80-20% 50V
C410	0880044	PF 0.01MF +-10% 50V	C477	0800016	CAPACITOR, ELECTROLYTIC 10MF 25V
C411	0253079	EL 0.22MF 50V	C478	0800082	CAPACITOR, ELECTROLYTIC 1000MF 16V
C412	0800009	CAPACITOR, ELECTROLYTIC 4.7MF 25V	C501	0890081	CD 330PF +-10% 50V
C413	0800009	CAPACITOR, ELECTROLYTIC 4.7MF 25V	C502	0890061	CD 10PF +-0.5% 50V
C414	0800009	CAPACITOR, ELECTROLYTIC 4.7MF 25V	C503	0890077	CD 180PF +-10% 50V
C415	0800009	CAPACITOR, ELECTROLYTIC 4.7MF 25V	C504	0890071	CD 56PF +-5% 50V
C416	0800039	CAPACITOR, ELECTROLYTIC 47MF 10V	C505	0890074	CD 100PF +-5% 50V
C417	0880057	PF 0.1MF +-10% 50V	C506	0244171	CD 0.01MF +-80-20% 50V
C418	0292712F	TA 3.3MF 16V	C507	0880044	PF 0.01MF +-10% 50V
C419	0800015	CAPACITOR, ELECTROLYTIC 10MF 16V	C508	0244105	CD 2200PF +-10% 50V
C420	0292714F	TA 10MF +-10% 16V	C509	0244171	CD 0.01MF +-80-20% 50V
C421	0800001	CAPACITOR, ELECTROLYTIC 0.47MF 50V	C510	0800001	CAPACITOR, ELECTROLYTIC 0.47MF 50V
C422	0800001	CAPACITOR, ELECTROLYTIC 0.47MF 50V	C511	0800082	CAPACITOR, ELECTROLYTIC 1000MF 16V
C423	0800007	CAPACITOR, ELECTROLYTIC 3.3MF 50V	C512	0246445	CD 16PF +-5% 50V
C424	0800001	CAPACITOR, ELECTROLYTIC 0.47MF 50V	C516	0244171	CD 0.01MF +-80-20% 50V
C425	0800001	CAPACITOR, ELECTROLYTIC 0.47MF 50V	C518	0880044	PF 0.01MF +-10% 50V
C426	0800009	CAPACITOR, ELECTROLYTIC 4.7MF 25V	C519	0244105	CD 2200PF +-10% 50V
C427	0800001	CAPACITOR, ELECTROLYTIC 0.47MF 50V	C520	0800074	CAPACITOR, ELECTROLYTIC 470MF 16V
C428	0800001	CAPACITOR, ELECTROLYTIC 0.47MF 50V	C601	0800048	CAPACITOR, ELECTROLYTIC 100MF 10V
C429	0800049	CAPACITOR, ELECTROLYTIC 100MF 16V	C602	0800003	CAPACITOR, ELECTROLYTIC 1MF 50V
C430	0800001	CAPACITOR, ELECTROLYTIC 0.47MF 50V	C603	0890089	CD 1500PF +-10% 50V
C431	0800009	CAPACITOR, ELECTROLYTIC 4.7MF 25V	C604	0880046	PF 0.015MF +-10% 50V
C432	0880044	PF 0.01MF +-10% 50V	C605	0800007	CAPACITOR, ELECTROLYTIC 3.3MF 50V
C433	0800015	CAPACITOR, ELECTROLYTIC 10MF 16V	C624	0800007	CAPACITOR, ELECTROLYTIC 3.3MF 50V
C435	0800015	CAPACITOR, ELECTROLYTIC 10MF 16V	C625	0800041	CAPACITOR, ELECTROLYTIC 47MF 16V
C436	0800015	CAPACITOR, ELECTROLYTIC 10MF 16V	C626	0292716	TA 1MF +-10% 20V
C438	0800015	CAPACITOR, ELECTROLYTIC 10MF 16V	C627	0800052	CAPACITOR, ELECTROLYTIC 100MF 35V
C439	0800005	CAPACITOR, ELECTROLYTIC 2.2MF 50V	C629	0800007	CAPACITOR, ELECTROLYTIC 3.3MF 50V
C440	0800015	CAPACITOR, ELECTROLYTIC 10MF 16V	C630	0800003	CAPACITOR, ELECTROLYTIC 1MF 50V
C441	0800015	CAPACITOR, ELECTROLYTIC 10MF 16V	C631	0800056	CAPACITOR, ELECTROLYTIC 220MF 6.3V
C452	0800001	CAPACITOR, ELECTROLYTIC 0.47MF 50V	C632	0800083	CAPACITOR, ELECTROLYTIC 1000MF 25V
C453	0800001	CAPACITOR, ELECTROLYTIC 0.47MF 50V	C633	0880057	PF 0.1MF +-10% 50V
C454	0800047	CAPACITOR, ELECTROLYTIC 100MF 6.3V	C650	0800003	CAPACITOR, ELECTROLYTIC 1MF 50V
C455	0244105	CD 2200PF +-10% 50V	C651	0800005	CAPACITOR, ELECTROLYTIC 2.2MF 50V
C456	0800083	CAPACITOR, ELECTROLYTIC 1000MF 25V	C652	0244111	CD 6800PF +-10% 50V
C457	0244105	CD 2200PF +-10% 50V	C653	0800041	CAPACITOR, ELECTROLYTIC 47MF 16V
C458	0800047	CAPACITOR, ELECTROLYTIC 100MF 6.3V	C655	0800018	CAPACITOR, ELECTROLYTIC 10MF 50V
C459	0880057	PF 0.1MF +-10% 50V	C656	0880053	PF 0.047MF +-10% 50V
C460	0800058	CAPACITOR, ELECTROLYTIC 220MF 16V	C657	0800005	CAPACITOR, ELECTROLYTIC 2.2MF 50V
C461	0800058	CAPACITOR, ELECTROLYTIC 220MF 16V	C658	0880042	PF 6800PF +-10% 50V

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SYMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION
C659	0800003	CAPACITOR ELECTROLYTIC 1MF 50V	C904	0244571	CD 0.01MF +100-0% 500V
C701	0800003	CAPACITOR ELECTROLYTIC 1MF 50V	Δ C905	0253891	EL 470MF 200V
C702	0890082	CD 390PF +10% 50V	C906	0253957	EL 22MF 160V
C703	0244171	CD 0.01MF +80-20% 50V	Δ C908	0248593F	CD 4700PF +80-20% 250V
C704	0800049	CAPACITOR, ELECTROLYTIC 100MF 16V	C909	0284891F	EL 150MF 200V
C705	0800001	CAPACITOR ELECTROLYTIC 0.47MF 50V	Δ C910	0245611	CD 3300PF +10% 1KV
C706	0890087	CD 1000PF +10% 50V	C911	0276673	PF 0.47MF +10% 50V
C707	0880051	PF 0.033MF +10% 50V	C912	0890087	CD 1000PF +10% 50V
C708	0800003	CAPACITOR ELECTROLYTIC 1MF 50V	C913	0880044	PF 0.01MF +10% 50V
C709	0800003	CAPACITOR ELECTROLYTIC 1MF 50V	C914	0880044	PF 0.01MF +10% 50V
C710	0890087	CD 1000PF +10% 50V	C915	0880044	PF 0.01MF +10% 50V
C720	0247842	CD 33PF +5% 500V	C916	0243507	CD 330PF +10% 500V
C721	0244109	CD 4700PF +10% 50V	C917	0890081	CD 330PF +10% 50V
C722	0890089	CD 1500PF +10% 50V	C918	0800084	CAPACITOR ELECTROLYTIC 1000MF 35V
C723	0880019	PF 0.33MF +10% 50V	C919	0253934	EL 2200MF 35V
Δ C724	0244215	CD 2200PF +10% 2KV	C920	0258192F	EL 2200MF 25V
C725	0244215	CD 2200PF +10% 2KV	C921	0800059	CAPACITOR ELECTROLYTIC 220MF 25V
Δ C726	0262429F	PP 0.012MF +5% 1800V	C922	0890087	CD 1000PF +10% 50V
Δ C727	0299931	PP 0.27MF +10% 200V	C923	0800015	CAPACITOR, ELECTROLYTIC 10MF 16V
Δ C728	0299932	PP 0.33MF +10% 200V	C924	0800049	CAPACITOR, ELECTROLYTIC 100MF 16V
C729	0244501	CD 1000PF +10% 500V	C927	0800056	CAPACITOR, ELECTROLYTIC 220MF 6.3V
C730	0255510	EL 100MF +20% 160V	C929	0800015	CAPACITOR, ELECTROLYTIC 10MF 16V
Δ C731	0800021	CAPACITOR ELECTROLYTIC 10MF 100V	C930	0800023	CAPACITOR ELECTROLYTIC 22MF 16V
C732	0244501	CD 1000PF +10% 500V	C932	0800049	CAPACITOR, ELECTROLYTIC 100MF 16V
C733	0259171	EL 4.7MF 250V	Δ C951	0249393	CD 3300PF +20%
C734	0880057	PF 0.1MF +10% 50V	C952	0800047	CAPACITOR ELECTROLYTIC 100MF 6.3V
Δ C736	0263001	EL 3.3MF 100V	C953	0800057	CAPACITOR ELECTROLYTIC 220MF 10V
Δ C737	0299707	PP 0.015MF +10% 630V	C954	0880062	PF 0.22MF +10% 50V
C739	0800003	CAPACITOR ELECTROLYTIC 1MF 50V			
C743	0253942	EL 0.22MF 50V			
C750	0800005	CAPACITOR, ELECTROLYTIC 2.2MF 50V			
C751	0800044	CAPACITOR ELECTROLYTIC 47MF 50V			
C752	0284623R	EL 1MF 50V			
C754	0800009	CAPACITOR ELECTROLYTIC 4.7MF 25V			
C755	0244171	CD 0.01MF +80-20% 50V			
C769	0800001	CAPACITOR ELECTROLYTIC 0.47MF 50V			
C851	0800049	CAPACITOR, ELECTROLYTIC 100MF 16V			
C852	0890087	CD 1000PF +10% 50V			
C853	0257540	EL 4.7MF 250V			
C856	0244215	CD 2200PF +10% 2KV			
C860	0890087	CD 1000PF +10% 50V			
C861	0890087	CD 1000PF +10% 50V			
C862	0890087	CD 1000PF +10% 50V			
C864	0890077	CD 180PF +10% 50V			
C865	0890087	CD 1000PF +10% 50V			
C866	0890082	CD 390PF +10% 50V			
C870	0890087	CD 1000PF +10% 50V			
C872	0890074	CD 100PF +5% 50V			
C873	0890074	CD 100PF +5% 50V			
C874	0890074	CD 100PF +5% 50V			
C875	0890076	CD 150PF +10% 50V			
C887	0890087	CD 1000PF +10% 50V			
Δ C901	0279719	PF 0.22MF +10% 125V			
Δ C902	0248593F	CD 4700PF +80-20% 250V			
Δ C903	0248593F	CD 4700PF +80-20% 250V			

RESISTORS

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SYMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION
R124	0700046	CF 2.7K OHM +5% 1/16W	R180	0700051	CF 5.6K OHM +5% 1/16W
R125	0700041	CF 1K OHM +5% 1/16W	R181	0700042	CF 1.2K OHM +5% 1/16W
R126	0700041	CF 1K OHM +5% 1/16W	R182	0700067	CF 100K OHM +5% 1/16W
R127	0700041	CF 1K OHM +5% 1/16W	R183	0700067	CF 100K OHM +5% 1/16W
R129	0700043	CF 1.5K OHM +5% 1/16W	R184	0700041	CF 1K OHM +5% 1/16W
R130	0700067	CF 100K OHM +5% 1/16W	R185	0700027	CF 100 OHM +5% 1/16W
R131	0700067	CF 100K OHM +5% 1/16W	R188	0700061	CF 33K OHM +5% 1/16W
R132	0700067	CF 100K OHM +5% 1/16W	R189	0700062	CF 39K OHM +5% 1/16W
R133	0700067	CF 100K OHM +5% 1/16W	R191	0700054	CF 10K OHM +5% 1/16W
R134	0700041	CF 1K OHM +5% 1/16W	R193	0700041	CF 1K OHM +5% 1/16W
R135	0700041	CF 1K OHM +5% 1/16W	R194	0700045	CF 2.2K OHM +5% 1/16W
R136	0700032	CF 220 OHM +5% 1/16W	R195	0700054	CF 10K OHM +5% 1/16W
R137	0700041	CF 1K OHM +5% 1/16W	R196	0700054	CF 10K OHM +5% 1/16W
R138	0700041	CF 1K OHM +5% 1/16W	R197	0700054	CF 10K OHM +5% 1/16W
R139	0700041	CF 1K OHM +5% 1/16W	R199	0700041	CF 1K OHM +5% 1/16W
R140	0700041	CF 1K OHM +5% 1/16W	R202	0700041	CF 1K OHM +5% 1/16W
R141	0700041	CF 1K OHM +5% 1/16W	R203	0150287	VR 10K OHM-B
R142	0700041	CF 1K OHM +5% 1/16W	R204	0700041	CF 1K OHM +5% 1/16W
R143	0700041	CF 1K OHM +5% 1/16W	R205	0700067	CF 100K OHM +5% 1/16W
R144	0700041	CF 1K OHM +5% 1/16W	R208	0700033	CF 270 OHM +5% 1/16W
R145	0700041	CF 1K OHM +5% 1/16W	R209	0700051	CF 5.6K OHM +5% 1/16W
R146	0700041	CF 1K OHM +5% 1/16W	R210	0700058	CF 22K OHM +5% 1/16W
R147	0700059	CF 27K OHM +5% 1/16W	R211	0100127	CF 390K OHM +5% 1/8W
R148	0700041	CF 1K OHM +5% 1/16W	R212	0100117	CF 150K OHM +5% 1/8W
R149	0700041	CF 1K OHM +5% 1/16W	R213	0100121	CF 220K OHM +5% 1/8W
R150	0700041	CF 1K OHM +5% 1/16W	R214	0700036	CF 470 OHM +5% 1/16W
R151	0700041	CF 1K OHM +5% 1/16W	R215	0700037	CF 560 OHM +5% 1/16W
R152	0700046	CF 2.7K OHM +5% 1/16W	R216	0700026	CF 82 OHM +5% 1/16W
R153	0700052	CF 6.8K OHM +5% 1/16W	R217	0700027	CF 100 OHM +5% 1/16W
R154	0187086	CF 7.5K OHM +5% 1/16W	R218	0700036	CF 470 OHM +5% 1/16W
R155	0700059	CF 27K OHM +5% 1/16W	R219	0700049	CF 4.7K OHM +5% 1/16W
R156	0700049	CF 4.7K OHM +5% 1/16W	R242	0700027	CF 100 OHM +5% 1/16W
R157	0700052	CF 6.8K OHM +5% 1/16W	R243	0700049	CF 4.7K OHM +5% 1/16W
R158	0700051	CF 5.6K OHM +5% 1/16W	R244	0700036	CF 470 OHM +5% 1/16W
R159	0700055	CF 12K OHM +5% 1/16W	R245	0187040	CF 91 OHM +5% 1/16W
R160	0700056	CF 15K OHM +5% 1/16W	R246	0700031	CF 180 OHM +5% 1/16W
R161	0700056	CF 15K OHM +5% 1/16W	R247	0700014	CF 10 OHM +5% 1/16W
R162	0700058	CF 22K OHM +5% 1/16W	R248	0700033	CF 270 OHM +5% 1/16W
R163	0700041	CF 1K OHM +5% 1/16W	R250	0700046	CF 2.7K OHM +5% 1/16W
R164	0700049	CF 4.7K OHM +5% 1/16W	R251	0700042	CF 1.2K OHM +5% 1/16W
R165	0700041	CF 1K OHM +5% 1/16W	R252	0700023	CF 47 OHM +5% 1/16W
R166	0700041	CF 1K OHM +5% 1/16W	R253	0700041	CF 1K OHM +5% 1/16W
R167	0700041	CF 1K OHM +5% 1/16W	R254	0700041	CF 1K OHM +5% 1/16W
R168	0700067	CF 100K OHM +5% 1/16W	R255	0700027	CF 100 OHM +5% 1/16W
R169	0700056	CF 15K OHM +5% 1/16W	R3001	0100038	CF 75 OHM +5% 1/8W
R170	0700056	CF 15K OHM +5% 1/16W	R3002	0100041	CF 100 OHM +5% 1/8W
R171	0700064	CF 56K OHM +5% 1/16W	R3003	0700054	CF 10K OHM +5% 1/16W
R172	0700049	CF 4.7K OHM +5% 1/16W	R3004	0700051	CF 5.6K OHM +5% 1/16W
R173	0700045	CF 2.2K OHM +5% 1/16W	R301	0700027	CF 100 OHM +5% 1/16W
R174	0700041	CF 1K OHM +5% 1/16W	R302	0100057	CF 470 OHM +5% 1/8W
R175	0700041	CF 1K OHM +5% 1/16W	R3021	0100065	CF 1K OHM +5% 1/8W
R176	0700041	CF 1K OHM +5% 1/16W	R3022	0100065	CF 1K OHM +5% 1/8W
R177	0700067	CF 100K OHM +5% 1/16W	R3023	0100065	CF 1K OHM +5% 1/8W
R178	0700067	CF 100K OHM +5% 1/16W	R303	0700029	CF 150 OHM +5% 1/16W
R179	0700067	CF 100K OHM +5% 1/16W	R305	0100050	CF 240 OHM +5% 1/8W

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SYMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION
R306	0114133	CF 120 OHM \pm 5% 1/4W	R4006	0100133	CF 680K OHM \pm 5% 1/8W
R307	0150282	VR 500 OHM(B)	R4007	0700061	CF 33K OHM \pm 5% 1/16W
R308	0700041	CF 1K OHM \pm 5% 1/16W	R4008	0100009	CF 4.7 OHM \pm 5% 1/8W
R309	0700037	CF 560 OHM \pm 5% 1/16W	R401	0100113	CF 100K OHM \pm 5% 1/8W
R310	0700037	CF 560 OHM \pm 5% 1/16W	R402	0100065	CF 1K OHM \pm 5% 1/8W
R312	0700031	CF 180 OHM \pm 5% 1/16W	R403	0100113	CF 100K OHM \pm 5% 1/8W
R313	0100059	CF 560 OHM \pm 5% 1/8W	R404	0100065	CF 1K OHM \pm 5% 1/8W
R314	0100047	CF 180 OHM \pm 5% 1/8W	R405	0100113	CF 100K OHM \pm 5% 1/8W
R319	0700054	CF 10K OHM \pm 5% 1/16W	R406	0100113	CF 100K OHM \pm 5% 1/8W
R321	0700037	CF 560 OHM \pm 5% 1/16W	R407	0700041	CF 1K OHM \pm 5% 1/16W
R322	0100133	CF 680K OHM \pm 5% 1/8W	R408	0700041	CF 1K OHM \pm 5% 1/16W
R323	0700049	CF 4.7K OHM \pm 5% 1/16W	R409	0700041	CF 1K OHM \pm 5% 1/16W
R325	0700041	CF 1K OHM \pm 5% 1/16W	R410	0700041	CF 1K OHM \pm 5% 1/16W
R326	0700055	CF 12K OHM \pm 5% 1/16W	R411	0700041	CF 1K OHM \pm 5% 1/16W
R327	0700052	CF 6.8K OHM \pm 5% 1/16W	R412	0100065	CF 1K OHM \pm 5% 1/8W
R328	0700032	CF 220 OHM \pm 5% 1/16W	R413	0100065	CF 1K OHM \pm 5% 1/8W
R329	0700053	CF 8.2K OHM \pm 5% 1/16W	R414	0150287	VR 10K OHM-B
R330	0150287	VR 10K OHM-B	R415	0187082	CF 5.1K OHM \pm 5% 1/16W
R331	0700057	CF 18K OHM \pm 5% 1/16W	R416	0700046	CF 2.7K OHM \pm 5% 1/16W
R332	0700056	CF 15K OHM \pm 5% 1/16W	R417	0150284	VR 2K OHM-B
R333	0700049	CF 4.7K OHM \pm 5% 1/16W	R418	0700054	CF 10K OHM \pm 5% 1/16W
R334	0700061	CF 33K OHM \pm 5% 1/16W	R419	0700045	CF 2.2K OHM \pm 5% 1/16W
R335	0700031	CF 180 OHM \pm 5% 1/16W	R420	0150157	VR 200K OHM-B RV-6
R336	0700049	CF 4.7K OHM \pm 5% 1/16W	Δ R421	0119687	FR 4.7 OHM \pm 5% 1/4W
R337	0700049	CF 4.7K OHM \pm 5% 1/16W	R422	0700041	CF 1K OHM \pm 5% 1/16W
R338	0700037	CF 560 OHM \pm 5% 1/16W	R423	0150290	VR 50K OHM (B)
R339	0700057	CF 18K OHM \pm 5% 1/16W	R424	0150290	VR 50K OHM (B)
R340	0700045	CF 2.2K OHM \pm 5% 1/16W	R425	0100116	CF 130K OHM \pm 5% 1/8W
R341	0700041	CF 1K OHM \pm 5% 1/16W	R426	0100117	CF 150K OHM \pm 5% 1/8W
R342	0700059	CF 27K OHM \pm 5% 1/16W	R427	0100116	CF 130K OHM \pm 5% 1/8W
R344	0700048	CF 3.9K OHM \pm 5% 1/16W	R428	0150160	VR 10K OHM-B \pm 30%
R345	0700064	CF 56K OHM \pm 5% 1/16W	R429	0700038	CF 680 OHM \pm 5% 1/16W
R346	0700063	CF 47K OHM \pm 5% 1/16W	R430	0700038	CF 680 OHM \pm 5% 1/16W
R347	0700041	CF 1K OHM \pm 5% 1/16W	R432	0700051	CF 5.6K OHM \pm 5% 1/16W
R348	0700027	CF 100 OHM \pm 5% 1/16W	R433	0700041	CF 1K OHM \pm 5% 1/16W
R349	0700062	CF 39K OHM \pm 5% 1/16W	R434	0700041	CF 1K OHM \pm 5% 1/16W
R350	0700036	CF 470 OHM \pm 5% 1/16W	R435	0700054	CF 10K OHM \pm 5% 1/16W
R351	0700033	CF 270 OHM \pm 5% 1/16W	R436	0700041	CF 1K OHM \pm 5% 1/16W
R352	0700027	CF 100 OHM \pm 5% 1/16W	Δ R437	01195051	FR 2.2 OHM \pm 5% 1/4W
R353	0700059	CF 27K OHM \pm 5% 1/16W	R438	0700047	CF 3.3K OHM \pm 5% 1/16W
R354	0700058	CF 22K OHM \pm 5% 1/16W	R439	0700054	CF 10K OHM \pm 5% 1/16W
R362	0700027	CF 100 OHM \pm 5% 1/16W	R440	0700041	CF 1K OHM \pm 5% 1/16W
R363	0700049	CF 4.7K OHM \pm 5% 1/16W	R441	0700041	CF 1K OHM \pm 5% 1/16W
R364	0700043	CF 1.5K OHM \pm 5% 1/16W	R442	0700049	CF 4.7K OHM \pm 5% 1/16W
R365	0100057	CF 470 OHM \pm 5% 1/8W	R443	0700049	CF 4.7K OHM \pm 5% 1/16W
R375	0700054	CF 10K OHM \pm 5% 1/16W	R444	0700032	CF 220 OHM \pm 5% 1/16W
R376	0700042	CF 1.2K OHM \pm 5% 1/16W	R445	0700067	CF 100K OHM \pm 5% 1/16W
R377	0700058	CF 22K OHM \pm 5% 1/16W	R446	0700041	CF 1K OHM \pm 5% 1/16W
R378	0700063	CF 47K OHM \pm 5% 1/16W	R447	0700032	CF 220 OHM \pm 5% 1/16W
R379	0700036	CF 470 OHM \pm 5% 1/16W	R448	0700067	CF 100K OHM \pm 5% 1/16W
R400	0700067	CF 100K OHM \pm 5% 1/16W	R449	0700041	CF 1K OHM \pm 5% 1/16W
R4002	0700037	CF 560 OHM \pm 5% 1/16W	R450	0700051	CF 5.6K OHM \pm 5% 1/16W
R4003	0700049	CF 4.7K OHM \pm 5% 1/16W	R451	0700049	CF 4.7K OHM \pm 5% 1/16W
R4004	0700049	CF 4.7K OHM \pm 5% 1/16W	R452	0700058	CF 22K OHM \pm 5% 1/16W
R4005	0100125	CF 330K OHM \pm 5% 1/8W	R453	0700064	CF 56K OHM \pm 5% 1/16W

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SYMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION
R454	0700064	CF 56K OHM + -5% 1/16W	R518	0100049	CF 220 OHM + -5% 1/8W
R455	0700058	CF 22K OHM + -5% 1/16W	R519	0100049	CF 220 OHM + -5% 1/8W
R456	0700041	CF 1K OHM + -5% 1/16W	R520	0700052	CF 6.8K OHM + -5% 1/16W
R457	0700067	CF 100K OHM + -5% 1/16W	R521	0700045	CF 2.2K OHM + -5% 1/16W
R458	0700032	CF 220 OHM + -5% 1/16W	R523	0700054	CF 10K OHM + -5% 1/16W
R459	0700035	CF 390 OHM + -5% 1/16W	R524	0700052	CF 6.8K OHM + -5% 1/16W
R460	0700041	CF 1K OHM + -5% 1/16W	R525	0700061	CF 33K OHM + -5% 1/16W
R461	0700067	CF 100K OHM + -5% 1/16W	R525A	0700059	CF 27K OHM + -5% 1/16W
R462	0700032	CF 220 OHM + -5% 1/16W	R529	0100119	CF 180K OHM + -5% 1/8W
R463	0700035	CF 390 OHM + -5% 1/16W	R530	0700041	CF 1K OHM + -5% 1/16W
R464	0700067	CF 100K OHM + -5% 1/16W	R531	0700027	CF 100 OHM + -5% 1/16W
R465	0700067	CF 100K OHM + -5% 1/16W	R532	0700054	CF 10K OHM + -5% 1/16W
R466	0700041	CF 1K OHM + -5% 1/16W	R533	0700054	CF 10K OHM + -5% 1/16W
R467	0700034	CF 330 OHM + -5% 1/16W	R581	0700054	CF 10K OHM + -5% 1/16W
R468	0700041	CF 1K OHM + -5% 1/16W	R582	0700041	CF 1K OHM + -5% 1/16W
R469	0700038	CF 680 OHM + -5% 1/16W	R583	0700054	CF 10K OHM + -5% 1/16W
R470	0700038	CF 680 OHM + -5% 1/16W	R584	0700054	CF 10K OHM + -5% 1/16W
R471	0187056M	RD 430 OHM + -5% 1/16W	R585	0700061	CF 33K OHM + -5% 1/16W
R472	0700054	CF 10K OHM + -5% 1/16W	R601	0700041	CF 1K OHM + -5% 1/16W
R473	0700063	CF 47K OHM + -5% 1/16W	R602	0700042	CF 1.2K OHM + -5% 1/16W
R474	0100113	CF 100K OHM + -5% 1/8W	R604	0100055	CF 390 OHM + -5% 1/8W
R475	0700034	CF 330 OHM + -5% 1/16W	R605	0700054	CF 10K OHM + -5% 1/16W
R476	0187056M	RD 430 OHM + -5% 1/16W	R606	0700059	CF 27K OHM + -5% 1/16W
Δ R477	01195051	FR 2.2 OHM + -5% 1/4W	R607	0700048	CF 3.9K OHM + -5% 1/16W
Δ R478	01195051	FR 2.2 OHM + -5% 1/4W	R608	0700032	CF 220 OHM + -5% 1/16W
R479	0700043	CF 1.5K OHM + -5% 1/16W	R609	0700034	CF 330 OHM + -5% 1/16W
R480	0700044	CF 1.8K OHM + -5% 1/16W	R610	0700041	CF 1K OHM + -5% 1/16W
Δ R481	01195051	FR 2.2 OHM + -5% 1/4W	R611	0700064	CF 56K OHM + -5% 1/16W
R483	0700044	CF 1.8K OHM + -5% 1/16W	R612	0700063	CF 47K OHM + -5% 1/16W
R484	0700044	CF 1.8K OHM + -5% 1/16W	R613	0700027	CF 100 OHM + -5% 1/16W
Δ R485	01195051	FR 2.2 OHM + -5% 1/4W	R614	0100055	CF 390 OHM + -5% 1/8W
R486	0700053	CF 8.2K OHM + -5% 1/16W	R615	0700058	CF 22K OHM + -5% 1/16W
R487	0700053	CF 8.2K OHM + -5% 1/16W	R616	0700027	CF 100 OHM + -5% 1/16W
R488	0700041	CF 1K OHM + -5% 1/16W	R620	0700041	CF 1K OHM + -5% 1/16W
R489	0700041	CF 1K OHM + -5% 1/16W	R625	0700049	CF 4.7K OHM + -5% 1/16W
R490	0700053	CF 8.2K OHM + -5% 1/16W	R626	0700059	CF 27K OHM + -5% 1/16W
R491	0700053	CF 8.2K OHM + -5% 1/16W	R627	0150160	VR 10K OHM-B -30%
R492	0700027	CF 100 OHM + -5% 1/16W	R628	0700032	CF 220 OHM + -5% 1/16W
R493	0700027	CF 100 OHM + -5% 1/16W	R629	0119841	MF 0.82 OHM + -5% 1W
R494	0700051	CF 5.6K OHM + -5% 1/16W	R630	0187104	CF 43K OHM + -5% 1/16W
R495	0700051	CF 5.6K OHM + -5% 1/16W	R631	0187106	CF 51K OHM + -5% 1/16W
R496	0700053	CF 8.2K OHM + -5% 1/16W	R632	0700067	CF 100K OHM + -5% 1/16W
R497	0700054	CF 10K OHM + -5% 1/16W	R633	0700047	CF 3.3K OHM + -5% 1/16W
R498	0700054	CF 10K OHM + -5% 1/16W	R634	0700037	CF 560 OHM + -5% 1/16W
R499	0700045	CF 2.2K OHM + -5% 1/16W	R635	0700041	CF 1K OHM + -5% 1/16W
R501	0700032	CF 220 OHM + -5% 1/16W	R636	0150287	VR 10K OHM-B
R502	0100061	CF 680 OHM + -5% 1/8W	R637	0700041	CF 1K OHM + -5% 1/16W
R503	0700034	CF 330 OHM + -5% 1/16W	R638	0113746	CF 680 OHM + -5% 1/2W
R504	0700037	CF 560 OHM + -5% 1/16W	R639	0113739	CF 390 OHM + -5% 1/2W
R505	0700058	CF 22K OHM + -5% 1/16W	R640	0113742	CF 470 OHM + -5% 1/2W
R506	0700054	CF 10K OHM + -5% 1/16W	R641	0700035	CF 390 OHM + -5% 1/16W
R507	0700054	CF 10K OHM + -5% 1/16W	R650	0700061	CF 33K OHM + -5% 1/16W
R515	0700057	CF 18K OHM + -5% 1/16W	R651	0700062	CF 39K OHM + -5% 1/16W
R516	0700058	CF 22K OHM + -5% 1/16W	R652	0700064	CF 56K OHM + -5% 1/16W
R517	0100049	CF 220 OHM + -5% 1/8W	R654	0700059	CF 27K OHM + -5% 1/16W

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SYMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION
R655	0700057	CF 18K OHM + -5% 1/16W	R759	0700064	CF 56K OHM + -5% 1/16W
R656	0700049	CF 4.7K OHM + -5% 1/16W	R760	0700066	CF 82K OHM + -5% 1/16W
R657	0100121	CF 220K OHM + -5% 1/8W	R762	0700058	CF 22K OHM + -5% 1/16W
R658	0100121	CF 220K OHM + -5% 1/8W	R763	0110269	MF 10K OHM + -5% 2W
R660	0700045	CF 2.2K OHM + -5% 1/16W	R764	0100075	CF 2.7K OHM + -5% 1/8W
R661	0700044	CF 1.8K OHM + -5% 1/16W	R765	0100071	CF 1.8K OHM + -5% 1/8W
R662	0110115	MF 56 OHM + -5% 1W	R766	0700027	CF 100 OHM + -5% 1/16W
R663	0700064	CF 56K OHM + -5% 1/16W	R767	0700064	CF 56K OHM + -5% 1/16W
R664	0114141	CF 270 OHM + -5% 1/4W	R768	0700059	CF 27K OHM + -5% 1/16W
R665	0700063	CF 47K OHM + -5% 1/16W	R769	0700056	CF 15K OHM + -5% 1/16W
R666	0700067	CF 100K OHM + -5% 1/16W	R770	0114171	CF 2.7K OHM + -5% 1/4W
R667	0100057	CF 470 OHM + -5% 1/8W	R772	0700067	CF 100K OHM + -5% 1/16W
R668	0700038	CF 680 OHM + -5% 1/16W	R775	0100077	CF 3.3K OHM + -5% 1/8W
R669	0700052	CF 6.8K OHM + -5% 1/16W	R776	0119695	MF 0.47 OHM + -5% 1W
R671	0110125	MF 150 OHM + -5% 1W	R777	0100087	CF 8.2K OHM + -5% 1/8W
R672	0700065	CF 68K OHM + -5% 1/16W	R778	0113774	CF 10K OHM + -5% 1/2W
R673	0100131	CF 560K OHM + -5% 1/8W	R779	0700046	CF 2.7K OHM + -5% 1/16W
R674	0700058	CF 22K OHM + -5% 1/16W	R780	0113748	CF 820 OHM + -5% 1/2W
R675	0100125	CF 330K OHM + -5% 1/8W	R781	0700065	CF 68K OHM + -5% 1/16W
R701	0700038	CF 680 OHM + -5% 1/16W	R782	0100133	CF 680K OHM + -5% 1/8W
R702	0100119	CF 180K OHM + -5% 1/8W	R783	0700067	CF 100K OHM + -5% 1/16W
R703	0114131	CF 100 OHM + -5% 1/4W	R801	0700047	CF 3.3K OHM + -5% 1/16W
R704	0100125	CF 330K OHM + -5% 1/8W	R802	0100089	CF 10K OHM + -5% 1/8W
R705	0700034	CF 330 OHM + -5% 1/16W	R803	0700045	CF 2.2K OHM + -5% 1/16W
R706	0700045	CF 2.2K OHM + -5% 1/16W	R804	0100089	CF 10K OHM + -5% 1/8W
R707	0700054	CF 10K OHM + -5% 1/16W	R805	0700023	CF 47 OHM + -5% 1/16W
R708	0700045	CF 2.2K OHM + -5% 1/16W	R806	0150109	VR 200 OHM-B RS-6
R709	0700041	CF 1K OHM + -5% 1/16W	R807	0150112	VR 2K OHM-B
R711	0700054	CF 10K OHM + -5% 1/16W	R808	0700038	CF 680 OHM + -5% 1/16W
R712	0700054	CF 10K OHM + -5% 1/16W	R809	0700038	CF 680 OHM + -5% 1/16W
R713	0150287	VR 10K OHM-B	R810	0700023	CF 47 OHM + -5% 1/16W
R720	0113729	CF 150 OHM + -5% 1/2W	R811	0100044	CF 130 OHM + -5% 1/8W
R721	0100035	CF 56 OHM + -5% 1/8W	R813	0700038	CF 680 OHM + -5% 1/16W
R722	0100037	CF 68 OHM + -5% 1/8W	R814	0150112	VR 2K OHM-B
R723	0110223	MF 120 OHM + -5% 2W	R815	0700023	CF 47 OHM + -5% 1/16W
R724	0700066	CF 82K OHM + -5% 1/16W	R816	0150109	VR 200 OHM-B RS-6
R726	0113758	CF 2.2K OHM + -5% 1/2W	R817	0700038	CF 680 OHM + -5% 1/16W
R727	0114143	CF 330 OHM + -5% 1/4W	R818	0150112	VR 2K OHM-B
Δ R728	01195051	FR 2.2 OHM + -5% 1/4W	R819	0700027	CF 100 OHM + -5% 1/16W
Δ R729	01195121	FR 1 OHM + -5% 1/4W	R820	0700027	CF 100 OHM + -5% 1/16W
R731	0110141	MF 680 OHM + -5% 1W	R821	0700027	CF 100 OHM + -5% 1/16W
R732	0113750	CF 1K OHM + -5% 1/2W	R851	0110367	MF 8.2K OHM + -5% 3W
R733	0100102	CF 36K OHM + -5% 1/8W	R852	0110367	MF 8.2K OHM + -5% 3W
R735	0700053	CF 8.2K OHM + -5% 1/16W	R853	0110367	MF 8.2K OHM + -5% 3W
R736	0700032	CF 220 OHM + -5% 1/16W	R875	0113750	CF 1K OHM + -5% 1/2W
R737	0700032	CF 220 OHM + -5% 1/16W	R876	0113750	CF 1K OHM + -5% 1/2W
R738	0100057	CF 470 OHM + -5% 1/8W	R877	0113750	CF 1K OHM + -5% 1/2W
R750	0100073	CF 2.2K OHM + -5% 1/8W	R878	0100053	CF 330 OHM + -5% 1/8W
R751	0700054	CF 10K OHM + -5% 1/16W	R879	0100053	CF 330 OHM + -5% 1/8W
R752	0150160	VR 10K OHM-B -30%	R880	0100053	CF 330 OHM + -5% 1/8W
R753	0700056	CF 15K OHM + -5% 1/16W	R881	0114131	CF 100 OHM + -5% 1/4W
R754	0700038	CF 680 OHM + -5% 1/16W	R882	0114131	CF 100 OHM + -5% 1/4W
R755	0150157	VR 200K OHM-B RV-6	R883	0114131	CF 100 OHM + -5% 1/4W
R757	0700044	CF 1.8K OHM + -5% 1/16W	R884	0100033	CF 47 OHM + -5% 1/8W
R758	0700051	CF 5.6K OHM + -5% 1/16W	R885	0100033	CF 47 OHM + -5% 1/8W

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SYMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION
R886	0100033	CF 47 OHM \pm 5% 1/8W	R958	0700045	CF 2.2K OHM \pm 5% 1/16W
R901	0147821	WW 3.9 OHM \pm 10% 16W	R959	0100099	CF 27K OHM \pm 5% 1/8W
R902	0110171	MF 12K OHM \pm 5% 1W	R960	0700046	CF 2.7K OHM \pm 5% 1/16W
R903	0100125	CF 330K OHM \pm 5% 1/8W	R961	0147060	WW 33 OHM \pm 5% 2W
Δ R904	0119508	FR 56 OHM \pm 5% 1/4W			
R905A	0110197	MF 10 OHM \pm 5% 2W			ICs
R905B	0110197	MF 10 OHM \pm 5% 2W			
R906	0141161	WW 220 OHM \pm 5% 15W	IC101	2001661	IC M37204M8-653SP (MICON)
R907	0110221	MF 100 OHM \pm 5% 2W	IC102	2380391	IC UPD6326C
R908	0114221	CF 68K OHM \pm 5% 1/4W	IC103	2381111	IC M6M80021L
R910	0114053	CF 33 OHM \pm 5% 1/4W	Δ IC201	2004132	IC LA7672 (LINER)
R911	0100103	CF 39K OHM \pm 5% 1/8W	IC401	2004361	IC CXA1279AS (LINEAR)
R912	0114221	CF 68K OHM \pm 5% 1/4W	IC402	2004591	IC AN5817K (LINEAR)
R913	0114171	CF 2.7K OHM \pm 5% 1/4W	IC450	2004341	IC AN7178 (LINER)
R914	0700027	CF 100 OHM \pm 5% 1/16W	Δ IC625	2003541	IC LA7838 (LINEAR)
R915	0110129	MF 220 OHM \pm 5% 1W	IC651	2362605	IC BA4558
R916	0110141	MF 680 OHM \pm 5% 1W	Δ IC701	2000521	IC PC713F6 (LINEAR)
R917	0114179	CF 5.6K OHM \pm 5% 1/4W	Δ IC702	2000465	IC PS2501-1 (KD/LD) (PHOTO COUPLER)
R918	0700067	CF 100K OHM \pm 5% 1/16W	Δ IC901	2912177	IC STR30130
R919	0114153	CF 820 OHM \pm 5% 1/4W	Δ IC902	2373292	IC STR-D6602 (HYBRID)
R920	01101495	MF 1.5 KOHM \pm 5% 1W	Δ IC903	2000521	IC PC713F6 (LINEAR)
R921	0700032	CF 220 OHM \pm 5% 1/16W	IC904	2003251	IC AN7805 (LINAR)
R922	0700049	CF 4.7K OHM \pm 5% 1/16W			TRANSISTORS
R923	0700043	CF 1.5K OHM \pm 5% 1/16W			
R924	0700041	CF 1K OHM \pm 5% 1/16W			
R925	0110207	MF 27 OHM \pm 5% 2W	Q101	2320596	TR 2SC458C/D SI 230MHZ 200MW
R925A	0113725	CF 100 OHM \pm 5% 1/2W	Q102	2320596	TR 2SC458C/D SI 230MHZ 200MW
R926	0110207	MF 27 OHM \pm 5% 2W	Q103	2320596	TR 2SC458C/D SI 230MHZ 200MW
R926A	0113725	CF 100 OHM \pm 5% 1/2W	Q104	2320596	TR 2SC458C/D SI 230MHZ 200MW
R927	0700041	CF 1K OHM \pm 5% 1/16W	Q105	2320596	TR 2SC458C/D SI 230MHZ 200MW
R928	0700063	CF 47K OHM \pm 5% 1/16W	Q106	2320637	TR 2SA673C/D SI 80MHZ 400MW
R929	0114153	CF 820 OHM \pm 5% 1/4W	Q107	2320596	TR 2SC458C/D SI 230MHZ 200MW
R930	0100033	CF 47 OHM \pm 5% 1/8W	Q201	2320596	TR 2SC458C/D SI 230MHZ 200MW
R931	0700054	CF 10K OHM \pm 5% 1/16W	Q202	2320144	TR 2SC1906
R932	0700054	CF 10K OHM \pm 5% 1/16W	Q241	2320596	TR 2SC458C/D SI 230MHZ 200MW
R933	0700044	CF 1.8K OHM \pm 5% 1/16W	Q301	2320596	TR 2SC458C/D SI 230MHZ 200MW
R934	0119691	MG 0.330HM \pm 5% 1W	Q302	2320596	TR 2SC458C/D SI 230MHZ 200MW
R935	0113723	CF 82 OHM \pm 5% 1/2W	Q303	2320596	TR 2SC458C/D SI 230MHZ 200MW
R936	0700045	CF 2.2K OHM \pm 5% 1/16W	Q304	2320596	TR 2SC458C/D SI 230MHZ 200MW
R937	0700054	CF 10K OHM \pm 5% 1/16W	Q305	2320596	TR 2SC458C/D SI 230MHZ 200MW
R938	0114149	CF 560 OHM \pm 5% 1/4W	Q306	2320637	TR 2SA673C/D SI 80MHZ 400MW
R939	0110135	MF 390 OHM \pm 5% 1W	Q307	2320637	TR 2SA673C/D SI 80MHZ 400MW
R940	0113688	CF 3.3 OHM \pm 5% 1/2W	Q308	2320596	TR 2SC458C/D SI 230MHZ 200MW
R941	0700049	CF 4.7K OHM \pm 5% 1/16W	Q309	2320596	TR 2SC458C/D SI 230MHZ 200MW
R942	0700054	CF 10K OHM \pm 5% 1/16W	Q310	2320596	TR 2SC458C/D SI 230MHZ 200MW
R944	0700033	CF 270 OHM \pm 5% 1/16W	Q401	2320596	TR 2SC458C/D SI 230MHZ 200MW
R945	0700057	CF 18K OHM \pm 5% 1/16W	Q402	2320596	TR 2SC458C/D SI 230MHZ 200MW
R948	0100033	CF 47 OHM \pm 5% 1/8W	Q403	2320596	TR 2SC458C/D SI 230MHZ 200MW
R951	0100133	CF 680K OHM \pm 5% 1/8W	Q404	2320596	TR 2SC458C/D SI 230MHZ 200MW
R952	0700051	CF 5.6K OHM \pm 5% 1/16W	Q405	2320596	TR 2SC458C/D SI 230MHZ 200MW
R953	0700053	CF 8.2K OHM \pm 5% 1/16W	Q406	2320596	TR 2SC458C/D SI 230MHZ 200MW
R954	0113688	CF 3.3 OHM \pm 5% 1/2W	Q407	2320596	TR 2SC458C/D SI 230MHZ 200MW
R955	0100133	CF 680K OHM \pm 5% 1/8W	Q408	2320596	TR 2SC458C/D SI 230MHZ 200MW
R956	0700047	CF 3.3K OHM \pm 5% 1/16W	Q450	2320596	TR 2SC458C/D SI 230MHZ 200MW
R957	0110309	MF 33 OHM \pm 5% 3W	Q451	2320596	TR 2SC458C/D SI 230MHZ 200MW

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SYMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION
Q452	2320596	TR 2SC458C/D SI 230MHZ 200MW	D116	23383211	DI 1SS270
Q453	2320596	TR 2SC458C/D SI 230MHZ 200MW	D120	23383211	DI 1SS270
Q454	2320596	TR 2SC458C/D SI 230MHZ 200MW	D121	23383211	DI 1SS270
Q455	2320596	TR 2SC458C/D SI 230MHZ 200MW	D122	23383211	DI 1SS270
Q456	2320596	TR 2SC458C/D SI 230MHZ 200MW	D123	23383211	DI 1SS270
Q501	2320596	TR 2SC458C/D SI 230MHZ 200MW	D3001	23394911	DI AM01Z
Q502	2320596	TR 2SC458C/D SI 230MHZ 200MW	D302	23383211	DI 1SS270
Q503	2320596	TR 2SC458C/D SI 230MHZ 200MW	D304	23383211	DI 1SS270
Q581	2320596	TR 2SC458C/D SI 230MHZ 200MW	D306	23383211	DI 1SS270
Q601	2320596	TR 2SC458C/D SI 230MHZ 200MW	D312	23383211	DI 1SS270
Q602	2320596	TR 2SC458C/D SI 230MHZ 200MW	D450	23383211	DI 1SS270
Q603	2320596	TR 2SC458C/D SI 230MHZ 200MW	D451	23383211	DI 1SS270
Q604	2320637	TR 2SA673C/D SI 80MHZ 400MW	D501	23383211	DI 1SS270
Q625	2320596	TR 2SC458C/D SI 230MHZ 200MW	D502	23383211	DI 1SS270
Q626	2320637	TR 2SA673C/D SI 80MHZ 400MW	D503	23383211	DI 1SS270
Q651	2320596	TR 2SC458C/D SI 230MHZ 200MW	D504	23383211	DI 1SS270
Q701	2320596	TR 2SC458C/D SI 230MHZ 200MW	D505	23383211	DI 1SS270
Q710	2323523	TRANSISTOR 2SD789 (D)	D506	23383211	DI 1SS270
Δ Q711	2315272	TRANSISTOR 2SC4589-03	D601	23383211	DI 1SS270
Q712	2320596	TR 2SC458C/D SI 230MHZ 200MW	D602	23383211	DI 1SS270
Q750	2320596	TR 2SC458C/D SI 230MHZ 200MW	D624	23383211	DI 1SS270
Q751	2320637	TR 2SA673C/D SI 80MHZ 400MW	D625	23394911	DI AM01Z
Q752	2315411	TRANSISTOR 2SD2012	D626	23394911	DI AM01Z
Δ Q753	2315471	TRANSISTOR 2SA1376A-L/K	D627	23394911	DI AM01Z
Q851	2320591	TR 2SC458B/C SI 230MHZ 200MW	D628	23383211	DI 1SS270
Q852	2320591	TR 2SC458B/C SI 230MHZ 200MW	D629	23383211	DI 1SS270
Q853	2320591	TR 2SC458B/C SI 230MHZ 200MW	D630	23383211	DI 1SS270
Q854	2315491	TRANSISTOR 2SC4544	D701	23383211	DI 1SS270
Q855	2315491	TRANSISTOR 2SC4544	Δ D710	2348511	DIODE RS3F5
Q856	2315491	TRANSISTOR 2SC4544	Δ D711	2336612	DI RU3AM
Q863	2320591	TR 2SC458B/C SI 230MHZ 200MW	D712	2338902	DI DFM1SA4
Q864	2320637	TR 2SA673C/D SI 80MHZ 400MW	Δ D713	23394811	DI AS01Z
Q901	2320643	TR 2SC1213C SI 80MHZ 400MW	D714	23383211	DI 1SS270
Q902	2320596	TR 2SC458C/D SI 230MHZ 200MW	D751	23383211	DI 1SS270
Δ Q903	2326631	THYRISTOR CR5AS-8	D752	23383211	DI 1SS270
Q904	2315411	TRANSISTOR 2SD2012	D753	23383211	DI 1SS270
Q905	2320637	TR 2SA673C/D SI 80MHZ 400MW	D754	23383211	DI 1SS270
Q906	2320637	TR 2SA673C/D SI 80MHZ 400MW	D755	23383211	DI 1SS270
Q907	2315411	TRANSISTOR 2SD2012	D757	23383211	DI 1SS270
Q908	2320643	TR 2SC1213C SI 80MHZ 400MW	D801	23383211	DI 1SS270
Q909	2320637	TR 2SA673C/D SI 80MHZ 400MW	D802	23383211	DI 1SS270
		DIODES	D803	23383211	DI 1SS270
			D804	23383211	DI 1SS270
			D805	23383211	DI 1SS270
			D806	23383211	DI 1SS270
			D807	23383211	DI 1SS270
			D808	23383211	DI 1SS270
			D809	23383211	DI 1SS270
			D810	23383211	DI 1SS270
			D811	23383211	DI 1SS270
			D872	23383211	DI 1SS270
D101	23383211	DI 1SS270	Δ D901	2332794	DI RB-156 SI
D102	23383211	DI 1SS270	Δ D902	2335982	DI RM11A
D103	23383211	DI 1SS270	D903	23383211	DI 1SS270
D104	23383211	DI 1SS270	D904	23383211	DI 1SS270
D105	23383211	DI 1SS270			
D106	23383211	DI 1SS270			
D107	23383211	DI 1SS270			
D108	23383211	DI 1SS270			
D110	23383211	DI 1SS270			
D111	23383211	DI 1SS270			
D115	23383211	DI 1SS270			

PRODUCT SAFETY NOTE: Components marked with a  have special characteristics important to safety. Before replacing any of these components, read carefully, the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

[illegible]

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SYMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION
L307	2122951	LA AXIAL COIL 39 MICRO H +-10%		4520881	M3X8 SCREW WITH WASHER (IC450, IC625, IC904, Q907)
L308	2122934	LA AXIAL COIL 2.2 MICRO H			
L309	2122956	LA AXIAL COIL 100 MICRO H +-10%		8821234	3 NUT (IC450, IC625, Q711)
L501	2122944	LA AXIAL COIL 12 MICRO H		8813124	WASHER (Q711)
L502	2122942	LA AXIAL COIL 8.2 MICRO H +-10%		4520883	M3X12 SCREW WITH WASHER (Q752, IC901)
L503	2122253	LA AXIAL COIL 100 MICRO H			
L601	2122956	LA AXIAL COIL 100 MICRO H +-10%		4137974	4X12 TAPPING SCREW WITH WASHER (IC901)
L702	2122938	LA AXIAL COIL 4.7 MICRO H			
L710	2165403	H.LINEARITY COIL		3737101	PURSE LOCK 15
△L711	2124181	CHOKE COIL		2788841	ANODE CLAMP
L712	2122253	LA AXIAL COIL 100 MICRO H		3700342	WIRE CLAMP
L713	2122099	FILTER COIL 18 MICRO H		3330941	EARTH SPRING
L850	2122253	LA AXIAL COIL 100 MICRO H		3763751	SK BINDER
L851	2122242	LA AXIAL COIL 15 MICRO H		2772981	FERRITE SHEET
L852	2122242	LA AXIAL COIL 15 MICRO H	DL301	2791101	DELAY LINE
L853	2122242	LA AXIAL COIL 15 MICRO H	△EANT	2687791	F-US ADAPTOR
L856	2122956	LA AXIAL COIL 100 MICRO H +-10%	△EF901	2720221	FUSE HOLDER
L861	2122653	FERRITE BEADS CORE	△EF902	2720221	FUSE HOLDER
△L901	2125481	HIGH FREQUENCY COIL	△EF903	2720221	FUSE HOLDER
△L902	2272293	LINE FILTER LL(T)	△M	2665272	4P PLUG PIN WITH BASE
L903	2122261	LA AXIAL COIL 390 MICRO H	SR	2902263	4P SUB MINI PLUG PIN
L904	2122653	FERRITE BEADS CORE	W	2661753	PIN PLUG WITH BASE
△L905	2122093	FILTER COIL	△E201	2982471	300-75 VHF ADAPTER
L906	2220581	CHOKING COIL	△E3001	2983099	5P PIN JACK
L907	2122652	FERRITE CORE	△E301	2573752	REMOTE CONTROL TRANSMITTER CLU- 670GR (HHEA MD) (HSCC MD)
L908	2122652	FERRITE CORE	E851	2953344	CPT SOCKET
L909	2122652	FERRITE CORE	△E901	2972521	POWER CORD
L910	2122652	FERRITE CORE	E903	2787531	MICA PLATE
L995	2165743	DEGAUSSING COIL	E952	3772201	AC CORD HOLDER
		SWITCH	FB701	2122653	FERRITE BEADS CORE
S101	2633171	5 KEY TACT SWITCH 5P	FB701A	2122653	FERRITE BEADS CORE
S102	2632923	TACT SWITCH	FB702	2771893	FERRITE BEADS CORE
		COLOR PICTURE TUBE	RF	2994843	MINI PIN PLUG WITH COAXIAL CABLE
			△RL901	2640572	POWER RELAY
			SG851	2340037	SPARK GAP
			△SG901	2340741	SPARK GAP
△V1	2470251	COLOR PICTURE TUBE A68AEG20X01 (HHEA MD) (HSCC MD)	△SP451	2412647	SPEAKER (HHEA MD) (HSCC MD)
			△SP452	2412647	SPEAKER (HHEA MD) (HSCC MD)
			TH651	2340371	THERMISTOR 112301-9
		MISCELLANEOUS	△TH901	2341261	THERMISTOR
			U0501	2575453	PIN P UNIT (HHEA MD) (HSCC MD)
	3821296	VR-DOOR ASS'Y (HHEA MD) (HSCC MD)	△U101	2428284	TUNER ET-350G
	3105371	FRAME ASS'Y (HHEA MD) (HSCC MD)	U102	2574761	REMOTE CONTROL RECEIVERS PS-409- 1G
	3872873	ANTENNA TERMINAL BOARD	X101	2168691	CRYSTAL 6.00MHZ
	3739671	CORD HOLDER	X501	2791502	CRYSTAL
	3875771	LATCH			
△	3164111	BACK COVER ASS'Y (HHEA MD) (HSCC MD)			
	3727972	HOLDER-AC LINE CORD			
	4963532	ANTENNA TERMINAL BOARD LABEL			
	2784342	CONDENSER COVER (CP901)			
	4243445	G51 INSULATOR (FBT)			
	4518742	M2.3X12 SCREW WITH WASHER (FBT)			

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